ADDITIONAL NOTES ON THE ERIOCAULACEAE. XXX

Harold N. Moldenke

ERIOCAULACEAE Lindl.

Additional & emended bibliography: Henckel, Nom. Bot. 68, 705, 776, & 812. 1797; Raeusch., Nom. Bot. 30 & 385. 1797; Pers., Syn. Pl. 1: 110--111 & 533. 1805; Steud., Nom. Bot. Phan., ed. 1, 312-313, 422, 550, & 839. 1821; Bong., Ess. Monog. Erioc. 1--74, pl. 1--19. 1831; Steud., Nom. Bot., ed. 2, 1: 585--586 (1840) and 2: 37, 184, 247, 532, & 654. 1841; Schomb., Reise Brit. Guian. 3: 1063--1064. 1848; Schomb., Vers. Fauna & Fl. Brit.-Guian. 3: 1063--1064. 1848; D. Dietr., Syn. Pl. 5: 259--268 & 579. 1852; Pritz., Icon. Ind. 2: 185. 1866; Körn., Abh. Naturw. Ver. Bremen 7: 34. 1880; N. E. Br. in Thiselt.-Dyer, Fl. Cap. 7: 51--59, 776, 781, & 782. 1897; Post & Kuntze, Lexicon 219 & 544. 1904; Stapf in H. Johnson, Liberia 2, app. 4: 662. 1906; Pax in Engl., Bot. Jahrb. 39: 609. 1907; Robinson & Fern., Rhodora 11: 40. 1909; T. Fr. in R. E. Fr., Wiss. Ergebn. Schwed. Rhod.-Kongo-Exped. 1911-12, 1: 218--219, pl. 16. 1916; W. E. Roth, Schomb. Travels 2: 3, 170, 176, 271, & 422. 1923; Sasaki, List Pl. Formos. 99 & 429. 1928; Stapf, Ind. Lond. 4: 22, 67, & 518--519. 1930; Moldenke, Phytologia 1: 309--336 & 343--364 (1939) and 2: 152--153. 1946; Terrac., Trav. Lab. Mat. Méd. 33 (3): 107. 1947; Moldenke, Phytologia 2: 220, 349--352, & 372--381 (1947), 2: 490--499 (1948), and 3: 79--80, 141--144, & 162--192. 1949; Duvigneaud, Lejeunia 16: 103. 1953; Seshagiri Rao, Journ. Bombay Nat. Hist. Soc. 55: 437. 1958; Standl. & Steyerm., Fieldiana Bot. 24: 374--380. 1958; Van der Veken, Bull. Soc. Roy. Bot. Belg. 91: 99--102. 1958; A. Robyns, Excerpt. Bot. A.1: 215. 1959; Jaques-Félix, Excerpt. Bot. A.1: 72. 1959; Hocking, Excerpt. Bot. A.4: 141 & 591--593 (1962) and A.5: 436. 1962; Anon., Excerpt. Bot. A.6: 458. 1963; K. U. Kramer, Excerpt. Bot. A.6: 33. 1963; Brunig, Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 307 & 311. 1965; F. R. Fosberg, Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 274 & 286. 1965; Jaeger, Lamotte, & Roy, Bull. Inst. Fond. Afr. Noire 28: 1160--1161, fig. 7. 1966; H. Weber in Fittkau, Illies, Klinge, Schwabe, & Sioli, Biogeogr. & Ecol. S. Am. 2: [Van Dye, Monog. Biol. 19:] 512. 1968; Lehr, Bull. Torr. Bot. Club 96: 721. 1969; Fassett, Man. Aquat. Pl., ed. 2, 169. 1969; Angely, Fl. Anal. & Fitogeogr. Est. S. Paulo, ed. 1, 1: 11 & 20. 1969; Eleuterius & Jones, Rhodora 71: 31. 1969; J. A. Steyerm., Act. Bot. Venez. 3: 88 & 96. 1969; Anon., Biol. Abstr. 50 (21): BASIC S.67 (1969) and 50 (24): BASIC S.68 & S.214. 1969; Moldenke, Biol. Abstr. 50: 12948 & 12949 (1969) and 51: 459. 1970; Anon., Biol. Abstr. 51 (1): BASIC S.73. 1970; Moldenke, Phytologia 19: 407--424, 440--496, & 508--512. 1970.

The misspelling Erocauloneae occurs in W. E. Roth, Schomb. Trav. 2: 271 (1923).

BLASTOCAULON ALBIDUM (Gardn.) Ruhl.

Additional & emended synonymy: *Eriocaulon albidum* Gardn. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 278 & 333. 1855. *Eriocaulon albidum* Steud. apud Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 877, in syn. 1893.

Additional & emended bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 278 & 333. 1855; Körn. in Mart., Fl. Bras. 3 (1): 277, 293, 350--352, & 507. 1863; Moldenke, Phytologia 19: 322 & 407. 1970.

BLASTOCAULON RUPESTRE (Gardn.) Ruhl.

Additional & emended synonymy: *Eriocaulon rupestre* Gardn. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 278 & 334. 1855. *Eriocaulon rupestre* Steud. apud Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 879, in syn. 1893.

Additional & emended bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 278 & 333. 1855; Körn. in Mart., Fl. Bras. 3 (1): 277, 293, 351, 352, & 507. 1863; Stapf, Ind. Lond. 4: 519. 1930; Moldenke, Phytologia 2: 494 (1948) and 19: 407. 1970.

Additional illustrations: Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 52, fig. 20. 1930.

Stapf (1930) asserts that this species is illustrated in Hook., Icon. Pl. 6: pl. 525 (1843), but the fact is that it is only described, not illustrated, there!

ERIOCAULON Gron.

Emended synonymy: *Schoenocaulon* Reichenb. ex Steud., Nom. Bot., ed. 2, 1: 585, in syn. 1840 [not *Schoenocaulon* A. Gray, 1837]. *Eriaucolon* L. ex Moldenke, Phytologia 2: 377, in syn. 1947.

Additional & emended bibliography: Raeusch., Nom. Bot. 30 & 385. 1797; Henckel, Nom. Bot. 68, 705, 776, & 812. 1797; Pers., Syn. Pl. 1: 110--111 & 533. 1805; Steud., Nom. Bot. Phan., ed. 1, 312--313, 422, & 550. 1821; Bong., Ess. Monog. Erioc. 1--74, pl. 1--19. 1831; Steud., Nom. Bot., ed. 2, 1: 585--586 (1840) and 2: 37, 184, 247, 532, & 654. 1841; Schomb., Reise Brit.-Guian. 3: 1064. 1848; Schomb., Vers. Fauna & Fl. Brit.-Guian. 3: 1064. 1848; D. Dietr., Syn. Pl. 5: 259--268 & 579. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 261, 267--283, 332--334, & 342. 1855; Körn., Linnaea 27: [561], 565, 571--573, 575, & 577--691. 1856; N. E. Br. in Thiselt.-Dyer, Fl. Cap. 7: 51--59 & 776. 1897; Robinson & Fern., Rhodora 11: 40. 1909; W. E. Roth, Schomb. Travels 2: 170 & 176. 1923; Sasaki, List Pl. Formos. 99 & 429. 1928; Stapf, Ind. Lond. 4: 518. 1930; Moldenke, Phytologia 1: 311--328, 330, 331, 333, 336, 343, & 347--364 (1939), 2: 153 (1946), 2: 220 & 373--381 (1947), 2: 491--495 (1948), and 3: 80, 142--144, & 180--192. 1949; Standl. & Steyerm., Fieldiana Bot. 24: 374--377. 1958; Seshagiri Rao, Journ. Bombay Nat. Hist. Soc. 55: 437. 1958; Jaques-Félix, Excerpt. Bot. A.1: 72. 1959; Hocking, Excerpt. Bot. A.5: 436. 1962; Anon., Excerpt. Bot. A.6: 458. 1963; K. U. Kramer, Excerpt. Bot. A.6: 33. 1963; Brunig, Govt. Sarawak Sympos.

Ecol. Res. Humid Trop. Veg. 307 & 311. 1965; F. R. Fosberg, Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 274 & 286. 1965; D. Walker, Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 141. 1965; H. Weber in Fittkau, Illies, Klinge, Schwabe, & Sioli, Biogeogr. & Ecol. S. Am. 2: [Van Oye, Monog. Biol. 19:] 512. 1968; Fassett, Man. Aquat. Pl., ed. 2, 169. 1969; Angely, Fl. Anal. & Fitogeogr. Est. S. Paulo, ed. 1, 1: 11. 1969; Eleuterius & Jones, Rhodora 71: 31. 1969; J. A. Steyerm., Act. Bot. Venez. 3: 96. 1969; Anon., Biol. Abstr. 50 (21): BASIC S.67. 1969; Lehr, Bull. Torr. Bot. Club 96: 721. 1969; Moldenke, Biol. Abstr. 50: 12948 & 12949 (1969) and 51: 459. 1970; Moldenke, Phytologia 19: 407—424, 440—496, & 509. 1970.

The index in Henckel's work (1797) cites a page "86" for this genus, but this seems to be a typographic error for page 68.

ERIOCAULON ABYSSINICUM Hochst.

Additional bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 273 & 333. 1855; Körn., Linnaea 27: 579, 584, 612—613, 616, & 618. 1856; N. E. Br. in Thiselt.-Dyer, Fl. Cap. 7: 53—54 & 776. 1897; Moldenke, Phytologia 19: 322, 412, & 489. 1970.

ERIOCAULON ACHITON Körn.

Additional & emended bibliography: Körn., Linnaea 27: 585 & 630—631. 1856; Körn. in Mart., Fl. Bras. 3 (1): 285. 1863; Moldenke, Phytologia 19: 322—323, 443, 464, & 477. 1970.

ERIOCAULON AFRICANUM Hochst.

Additional & emended bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 273 & 333. 1855; Körn., Linnaea 27: 585, 649—650, & 671. 1856; Körn. in Mart., Fl. Bras. 3 (1): 293 & 503. 1863; N. E. Br. in Thiselt.-Dyer, Fl. Cap. 7: 53, 56—57, & 776. 1897; Moldenke, Phytologia 3: 143 & 181 (1949) and 19: 323, 465, & 466. 1970.

ERIOCAULON AUSTRALE R. Br.

Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 312 (1821) and ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 569 & 612. 1841; D. Dietr., Syn. Pl. 5: 265. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 273 & 333. 1855; Körn., Linnaea 27: 582, 586, 686—687, & 692. 1856; Körn. in Mart., Fl. Bras. 3 (1): 286 & 503. 1863; Moldenke, Phytologia 2: 376 (1947), 2: 494 (1948), and 19: 325 & 415. 1970.

ERIOCAULON BENTHAMI Kunth

Additional & emended bibliography: Kunth, Enum. Pl. 3: 545 & 612. 1841; D. Dietr., Syn. Pl. 5: 263. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 269 & 333. 1855; Körn., Linnaea 27: 600. 1856; Körn. in Mart., Fl. Bras. 3 (1): 490—492 & 508. 1863; Moldenke, Phytologia 1: 311, 350, 356, 357, & 359 (1939) and 19: 326. 1970.

ERIOCAULON BIFISTULOSUM Van Heurck & Muell.-Arg.

Additional & emended bibliography: Moldenke, Phytologia 2: 375

(1947), 3: 143 & 183 (1949), and 19: 326. 1970.

ERIOCAULON BILOBATUM Morong

Additional & emended bibliography: Standl. & Steyerm., Fieldiana Bot. 24: 375. 1958; Moldenke, Phytologia 1: 311—312, 350, & 360 (1939) and 19: 326. 1970.

ERIOCAULON BREVIPEDUNCULATUM Merr.

Additional bibliography: Moldenke, Phytologia 2: 377 (1947) and 19: 326, 410, & 480. 1970.

The *E. acaule* Fosberg previously regarded by me as a synonym of this taxon seems to belong, rather, to the synonymy of the recently proposed *E. kinabaluense* Van Royen.

ERIOCAULON BREVISCAPUM Körn.

Additional & emended bibliography: Körn., Linnaea 27: 586 & 676—677. 1856; Körn. in Mart., Fl. Bras. 3 (1): 293. 1863; Moldenke, Phytologia 19: 21. 1969.

The *E. breviscapum* Mart. is a synonym of *Paepalanthus plantagineus* (Bong.) Körn., which see.

ERIOCAULON BROWNIANUM Mart.

Additional & emended bibliography: Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 562 & 612. 1841; D. Dietr., Syn. Pl. 5: 265. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 271 & 333. 1855; Körn., Linnaea 27: 585 & 663—664. 1856; Körn. in Mart., Fl. Bras. 3 (1): 503. 1863; Moldenke, Phytologia 2: 379 (1947) and 19: 326—327, 490, & 491. 1970.

ERIOCAULON BRUNONIS Britten

Additional & emended bibliography: Steud., Nom. Bot., ed. 1, 313 (1821) and ed. 2, 1: 586. 1840; Kunth, Enum. Pl. 3: 571 & 614. 1841; Steud., Syn. Pl. Glum. 2: [Cyp.] 269 & 334. 1855; Körn., Linnaea 27: 583 & 586—587. 1856; Moldenke, Phytologia 19: 327. 1970.

ERIOCAULON CINEREUM R. Br.

Additional & emended synonymy: *Eriocaulon setaceum* Willd. ex Kunth, Enum. Pl. 3: 552 & 614, in syn. 1841 [not *E. setaceum* Auct., 1903, nor Benth., 1893, nor Crantz, 1766, nor Heyne, 1832, nor L., 1753, nor Lour., 1790, nor Wall., 1893, nor Wight, 1832]. *Eriocaulon cinereum* Bong. ex Kunth, Enum. Pl. 3: 613, sphalm. 1841 [not *E. cinereum* Buch.-Ham., 1893, nor Hamilt., 1832]. *Eriocaulon sieboldtianum* Zucc. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 334. 1855.

Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 312 (1821) and ed. 2, 1: 585 & 586. 1840; Kunth, Enum. Pl. 3: 552, 571, 613, & 614. 1841; D. Dietr., Syn. Pl. 5: 266. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 272, 273, 333, & 334. 1855; Körn., Linnaea 27: 584, 613, & 618. 1856; Körn. in Mart., Fl.

Bras. 3 (1): 293. 1863; Kuntze, Rev. Gen. Pl. 2: 746. 1891; Moldenke, Phytologia 2: 373, 376, & 379 (1947), 2: 493 (1948), and 3: 144 & 185. 1949; Moldenke, Biol. Abstr. 50: 12949. 1969; Moldenke, Phytologia 19: 328—329, 339, 350, 415, 420, 450, 464, 476, & 477. 1970.

Steudel (1840) places *E. tenue* Hamilt. in the synonymy of *E. sexangulare* L., but this is obviously done because of his erroneous interpretation of the latter species.

ERIOCAULON COMPRESSUM Lam.

Additional & emended synonymy: *Eriocaulon cephalotes* Poir. ex Steud., Nom. Bot. Phan., ed. 1, 312 & 313. 1821. *Eriocaulon decangulare* Lam. ex Steud., Nom. Bot. Phan., ed. 1, 312 & 313, in syn. 1821. *Eriocaulon pubescens* var. β Pers. ex Steud., Nom. Bot. Phan., ed. 1, 312, in syn. 1821. *Eriocaulon gnaphaloides* Michx. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 268. 1855. *Eriaucolon gnaphalodes* Michx. ex Moldenke, Phytologia 2: 377, in syn. 1947.

Additional & emended bibliography: Pers., Syn. Pl. 1: 111. 1805; Steud., Nom. Bot. Phan., ed. 1, 312 & 313. 1821; Bong., Ess. Monog. Erioc. 3, 4, 29, & 30. 1831; Steud., Nom. Bot., ed. 2, 1: 585 & 586. 1840; Kunth, Enum. Pl. 3: 497, 542, 575, & 613. 1841; D. Dietr., Syn. Pl. 5: 263. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 268 & 334. 1855; Körn., Linnaea 27: 584, 592--594, & 596. 1856; Körn. in Mart., Fl. Bras. 3 (1): 285 & 503. 1863; Moldenke, Phytologia 1: 312—313, 348—354, & 356 (1939), 2: 153 (1946), 2: 373, 377, & 378 (1947), 2: 491 & 495 (1948), and 3: 80, 142, & 186--189. 1949; Eleuterius & Jones, Rhodora 71: 31. 1969; Moldenke, Phytologia 19: 329—330, 342, 351, 460, & 461. 1970.

Steudel (1821) reduces *E. decemangulare* Humb. & Bonpl. to synonymy under the present taxon and also *E. anceps* Walt., but the latter with a question. The former actually is a synonym of *E. humboldtii* Kunth and the latter is *Lachnocaulon anceps* (Walt.) Morong. The same author (1840) reduces *E. compressum*, in part, at least, to the African *E. pubescens* Lam. [now known as *Mesanthemum pubescens* (Lam.) Körn.], a disposition which is entirely unjustified.

ERIOCAULON CRASSISCAPUM Bong.

Additional synonymy: *Eriocaulon crassicarpum* Bong. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 333, sphalm. 1855.

Additional & emended bibliography: Bong., Ess. Monog. Erioc. 28. 1831; Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 574, 575, & 613. 1841; D. Dietr., Syn. Pl. 5: 267. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 269 & 333. 1855; Körn., Linnaea 27: 600. 1856; Körn. in Mart., Fl. Bras. 3 (1): 486—487 & 507. 1863; Moldenke, Phytologia 2: 374 & 375 (1947) and 19: 330. 1970.

Steudel (1855) cites only *P. Clausen 1180* from Minas Gerais, Brazil, as though this were the type collection. Bongard (1831) gives us no collector's name or number, saying merely of the type collection "In paludibus inter as Prados et Barbacena".

ERIOCAULON CRISTATUM Mart.

Additional synonymy: *Eriocaulon cristatum* Mart. & Wall. ex D. Dietr., Syn. Pl. 5: 264. 1852.

Additional & emended bibliography: Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 559—560, 568, & 613. 1841; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 271 & 333. 1855; Körn., Linnaea 27: 579, 584, & 607—611. 1856; Körn. in Mart., Fl. Bras. 3 (1): 280 & 503. 1863; Moldenke, Phytologia 2: 376 & 378 (1947) and 19: 330—331, 334, 418, & 420. 1970.

ERIOCAULON DECANGULARE L.

Emended synonymy: *Eriocaulon serotinum* Walt. & Lam. ex Steud., Nom. Bot. Phan., ed. 1, 312, in syn. 1821. *Eriocaulon gnaphalodes* Bernhardi ex Kunth, Enum. Pl. 3: 543 & 613, in syn. 1841 [not *E. gnaphalodes* Beauv., 1959, nor Michx., 1803, nor C. Wright, 1900]. *Eriocaulon villosum* Willd. ex Kunth, Enum. Pl. 3: 543 & 614, in syn. 1841 [not *E. villosum* Ell., 1968, nor Michx., 1803, nor Salzm., 1855].

Additional & emended bibliography: Henckel, Nom. Bot. 68. 1797; Raeusch., Nom. Bot. 30. 1797; Pers., Syn. Pl. 1: 110. 1805; Steud., Nom. Bot. Phan., ed. 1, 312 & 313. 1821; Bong., Ess. Monog. Erioc. 2, 4, & 8. 1831; Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 540, 543—544, 563, 580, 613, & 614. 1841; Schomb., Reise Brit.-Guian. 3: 1064. 1848; Schomb., Vers. Fauna & Fl. Brit.-Guian. 3: 1064. 1848; D. Dietr., Syn. Pl. 5: 263. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 268 & 333. 1855; Körn., Linnaea 27: 584, 589, 593, 596—598, & 667. 1856; Körn. in Mart., Fl. Bras. 3 (1): 280, 290, 474, 476, 491, 497, & 503. 1863; Moldenke, Phytologia 1: 314—316 & 348—363 (1939), 2: 153 (1946), 2: 378 & 379 (1947), 2: 491 & 494 (1948), and 3: 80, 142, & 190—192. 1949; Eleuterius & Jones, Rhodora 71: 31. 1969; Moldenke, Phytologia 19: 331—333, 460, 461, & 491. 1970.

The Lundells describe this plant as a "perennial herb, corolla yellow, anthers orange", flowering and fruiting in March.

Steudel (1841) reduces *E. decemangulare* Humb. & Bonpl. questionably to synonymy under *E. decangulare* L., but it actually belongs in the synonymy of *E. humboldtii* Kunth. The *E. decangulare* Lam., which he also lists, is a synonym of *E. compressum* Lam., while the homonym accredited to Humboldt & Bonpland by Bongard (1831) is *E. humboldtii* Kunth.

Additional citations: SOUTH CAROLINA: Hampton Co.: *Wilbur & Webster 2833* (Mi). TEXAS: Hardin Co.: *Lundell & Lundell 11902* (N).

ERIOCAULON DECANGULARE f. PARVICEPS Moldenke

Additional bibliography: Moldenke, Phytologia 19: 332, 333, 460, & 461. 1970.

Additional citations: TEXAS: Robertson Co.: *Lonard* *1956* (Mi).

ERIOCAULON DEPRESSUM R. Br.

Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 312 (1821) and ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 571 & 613. 1841; D. Dietr., Syn. Pl. 5: 266. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 269 & 333. 1855; Körn., Linnaea 27: 583, 587, & 588. 1856; Moldenke, Phytologia 19: 334. 1970.

ERIOCAULON DREGEI Hochst.

Additional bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 272 & 333. 1855; Körn., Linnaea 27: 586 & 671--674. 1856; Körn. in Mart., Fl. Bras. 3 (1): 300 & 503. 1863; N. E. Br. in Thiselt.-Dyer, Fl. Cap. 7: 53, 55--56, & 776. 1897; Moldenke, Phytologia 19: 335. 1970.

ERIOCAULON ECHINULATUM Mart.

Synonymy: *Eriocaulon* *echinulatum* Mart. & Endl. ex D. Dietr., Syn. Pl. 5: 265. 1852.

Additional & emended bibliography: Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 568, 569, & 613. 1841; D. Dietr., Syn. Pl. 5: 265. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 272 & 333. 1855; Körn., Linnaea 27: 579, 584, 619--620, & 692. 1856; Körn. in Mart., Fl. Bras. 3 (1): 284--286, 291, & 475. 1863; Moldenke, Phytologia 19: 335 & 478. 1970.

ERIOCAULON EHRENBERGIANUM Klotzsch

Additional & emended bibliography: Körn., Linnaea 27: 600. 1856; Körn. in Mart., Fl. Bras. 3 (1): 491--492 & 508. 1863; Moldenke, Phytologia 1: 316, 350, 352--354, & 360--362. 1939; Standl. & Steyerm., Fieldiana Bot. 24: 375--376. 1958; Moldenke, Phytologia 19: 335 & 447. 1970.

This species was collected in flower and fruit by Matuda in October.

Additional citations: MEXICO: Morelos: *Matuda* *25602* (N).

ERIOCAULON ELICHRYSOIDES Bong.

Additional & emended synonymy: *Eriocaulon* *pardinum* A. Dietr. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 334, sphalm. 1855. *Eriocaulon* *helichrysoides* Bong. apud Körn. in Mart., Fl. Bras. 3 (1): 476, 483, & 507. 1863 [not *E.* *helichrysoides* Steud., 1903].

Additional & emended bibliography: Bong., Ess. Monog. Erioc. 31. 1831; Guill. in Deless., Icon. Sel. 3: 60. 1837; Kunth, Enum. Pl. 3: 546, 548, 577, & 613. 1841; Steud., Syn. Pl. Glum. 2: [Cyp.] 269, 283, 333, & 334. 1855; Körn., Linnaea 27: 599. 1856; Körn. in Mart., Fl. Bras. 3 (1): 476, 483, & 507. 1863; Moldenke, Phytologia 19: 336. 1970.

ERIOCAULON FASCICULARE L.

Bibliography: Raeusch., Nom. Bot. 30. 1797.

Nothing is known to me of this taxon except that it is listed by Raeuschel (1797) as having been proposed by Linnaeus. It seems most probable that what Raeuschel intended to say was *E. fasciculatum* Lam., published in 1789 and now regarded as *Paepalanthus lamarckii* Kunth, which see.

ERIOCAULON FISTULOSUM R. Br.

Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 313 (1821) and ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 571 & 613. 1841; D. Dietr., Syn. Pl. 5: 266. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 269 & 334. 1855; Körn., Linnaea 27: 583 & 587. 1856; Moldenke, Phytologia 19: 336. 1970.

ERIOCAULON FULIGINOSUM C. Wright

Additional & emended bibliography: Moldenke, Phytologia 1: 317, 350, 352, 353, 355, 356, 358, 360, 361, & 363. 1939; Standl. & Steyerm., Fieldiana Bot. 24: 375 & 376. 1958; Moldenke, Phytologia 19: 336. 1970.

ERIOCAULON GIBBOSUM Körn.

Additional & emended bibliography: Körn., Linnaea 27: 600. 1856; Körn. in Mart., Fl. Bras. 3 (1): 293, 489—490, 500, & 507, pl. 61, fig. 1. 1863; Moldenke, Phytologia 2: 374 & 378. 1947; Moldenke, Biol. Abstr. 50: 12948. 1969; Moldenke, Phytologia 19: 336—337. 1970.

Additional citations: BRAZIL: Pará: *Sick B.878a* (Rf).

ERIOCAULON GOMPHRENOIDES Kunth

Additional & emended bibliography: Kunth, Enum. Pl. 3: 548 & 613. 1841; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 269--270 & 334. 1855; Körn., Linnaea 27: 599. 1856; Körn. in Mart., Fl. Bras. 3 (1): 481—482 & 506. 1863; Moldenke, Phytologia 19: 42. 1969.

ERIOCAULON GUYANENSE Körn.

Emended synonymy: *Eriocaulon guianense* Körn., Linnaea 27: 588. 1856 [not *E. guianense* A. Dietr., 1855].

Additional bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 269 & 334. 1855; Körn., Linnaea 27: 588. 1856; Körn. in Mart., Fl. Bras. 288, 291, 475, 478, & 507. 1863; Moldenke, Phytologia 2: 373 (1947) and 19: 337 & 447. 1970.

The *E. guianense* accredited to A. Dietrich is a synonym of *E. humboldtii* Kunth.

ERIOCAULON HAMILTONIANUM Mart.

Emended synonymy: *Eriocaulon cinereum* Hamilt. ex Wall., Numer. List 207, in syn. 1832 [not *E. cinereum* Bong., 1841, nor R. Br., 1810, nor Merr., 1940].

Additional & emended bibliography: Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 552 & 613. 1841; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 270 & 334. 1855; Körn., Linnaea 27: 581—583, 586, 679—680, & 683. 1856;

Körn. in Mart., Fl. Bras. 3 (1): 285 & 480. 1863; Moldenke, Phytologia 19: 337 & 476. 1970.

ERIOCAULON HETEROLEPIS Steud.

Additional & emended bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 271 & 334. 1855; Körn., Linnaea 27: 581, 585, & 652. 1856; Moldenke, Phytologia 19: 338, 347, 418, 420, & 477. 1970.

ERIOCAULON HETEROMALLUM Bong.

Synonymy: *Eriocaulon heteromallum* Kunth ex Steud., Syn. Pl. Glum. 2: [Cyp.] 279 & 334. 1855.

Additional & emended bibliography: Kunth, Enum. Pl. 3: 574 & 613. 1841; D. Dietr., Syn. Pl. 5: 267. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 279 & 334. 1855; Moldenke, Phytologia 18: 179. 1969.

ERIOCAULON HOOKERIANUM Stapf

Additional synonymy: *Eriocaulon macrophyllum* Ridl., Journ. Fed. Malay States Mus. 6: 191, in syn. 1915 [not *E. macrophyllum* Ruhl., 1903].

Additional bibliography: H. N. Ridl., Journ. Linn. Soc. Lond. Bot. 38: 332. 1908; K. U. Kramer, Excerpt. Bot. A.6: 33. 1963; Moldenke, Phytologia 19: 338, 416, 417, & 464. 1970.

ERIOCAULON HUMBOLDTII Kunth

Additional synonymy: *Eriocaulon decangulare* Humb. & Bonpl. ex Bong., Ess. Monog. Erioc. 8 & 30. 1831. *Eriocaulon decemangulare* Humb. & Kunth apud Kunth, Enum. Pl. 3: 544 & 613. 1841. *Eriocaulon decemangulare* Humb. & Bonpl. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 268 & 333. 1855. *Eriocaulon guianense* A. Dietr. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 269 & 333, in syn. 1855 [not *E. guianense* Körn., 1856].

Additional & emended bibliography: Bong., Ess. Monog. Erioc. 8 & 30. 1831; Kunth, Enum. Pl. 3: 544--545 & 613. 1841; Schomb., Reise Brit.-Guian. 3: 1064. 1848; Schomb., Vers. Fauna & Fl. Brit.-Guian. 3: 1064. 1848; D. Dietr., Syn. Pl. 5: 263. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 268, 269, 333, & 334. 1855; Körn., Linnaea 27: 601. 1856; Körn. in Mart., Fl. Bras. 3 (1): 476, 497, 498, & 507. 1863; Moldenke, Phytologia 2: 374. 1947; J. A. Steyerm., Act. Bot. Venez. 3: 96. 1969; Moldenke, Phytologia 19: 338--339 & 456. 1970.

ERIOCAULON INFIRMUM Steud.

Additional synonymy: *Eriocaulon gracile* Mart. & Wall. ex D. Dietr., Syn. Pl. 5: 264. 1852.

Additional & emended bibliography: Steud., Nom. Bot., ed. 2, 1: 575 & 586. 1840; Kunth, Enum. Pl. 3: 558--559 & 613. 1841; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 271 & 334. 1855; Körn., Linnaea 27: 581, 582, 585, 655--656, 658, 661, & 682. 1856; Körn. in Mart., Fl. Bras. 3 (1): 290, 292,

& 298. 1863; Moldenke, Phytologia 19: 337, 339—340, 478, & 491. 1970.

ERIOCAULON KINABALUENSE Van Royen

Additional synonymy: Eriocaulon acaule Fosberg, Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 286, nom. nud. 1965 [not E. acaule Pennell, 1959].

Additional bibliography: K. U. Kramer, Excerpt. Bot. A.6: 33. 1963; F. R. Fosberg, Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 286. 1965; Moldenke, Phytologia 19: 341. 1970.

Eriocaulon acaule Fosberg was previously regarded by me as a synonym of E. brevipedunculatum Merr., but apparently this disposition was incorrect. Fosberg (1965) says of it "forming hard cushions on hard granite slopes with sparse vegetation, 12,000 feet on Kinabalou South or South Peak".

ERIOCAULON KINLOCHII Moldenke

Additional & emended bibliography: Moldenke, Phytologia 1: 318, 350, & 357. 1939; Standl. & Steyerm., Fieldiana Bot. 24: 375 & 376. 1958; Moldenke, Phytologia 18: 248—249. 1969.

ERIOCAULON LANCEOLATUM Miq.

Additional & emended bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 271--272 & 334. 1855; Körn., Linnaea 27: 581, 585, 656—658, & 661. 1856; Moldenke, Phytologia 19: 341 & 477. 1970.

ERIOCAULON LATIFOLIUM J. Sm.

Additional bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 273 & 334. 1855; Körn., Linnaea 27: 605 & 666--667. 1856; Moldenke, Phytologia 19: 324, 341—342, 445, 485, & 486. 1970.

ERIOCAULON LEPTOPHYLLUM Kunth

Additional & emended bibliography: Kunth, Enum. Pl. 3: 549 & 613. 1841; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 270 & 334. 1855; Körn., Linnaea 27: 600. 1856; Körn. in Mart., Fl. Bras. 3 (1): 476, 494, & 506. 1863; Moldenke, Phytologia 2: 374, 375, 377, & 381 (1947) and 19: 73. 1969.

ERIOCAULON LEUCOMELAS Steud.

Additional synonymy: Eriocaulon nigrescens A. Dietr. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 272 & 334. 1855.

Additional & emended bibliography: Kunth, Enum. Pl. 3: 568 & 613. 1841; Steud., Syn. Pl. Glum. 2: [Cyp.] 272 & 334. 1855; Körn., Linnaea 27: 585, 647—649, 652, & 797. 1856; Körn. in Mart., Fl. Bras. 3 (1): 293. 1863; Moldenke, Phytologia 19: 342 & 464. 1970.

ERIOCAULON LIGULATUM (Vell.) L. B. Sm.

Additional & emended bibliography: Körn. in Mart., Fl. Bras. 3 (1): 482—484 & 507. 1863; Moldenke, Phytologia 3: 142 (1949) and

19: 342. 1970.
Additional citations: BRAZIL: Paraná: Hatschbach 11320 (Ac).

ERIOCAULON LINEARE Small
Additional & emended bibliography: Moldenke, Phytologia 1: 318--319, 349, 350, 352, 354, 356, 360, & 363 (1939), 2: 491 (1948), and 3: 80. 1949; Eleuterius & Jones, Rhodora 71: 31. 1969; Moldenke, Phytologia 19: 342 & 460. 1970.

ERIOCAULON LUZULAEFOLIUM Mart.
Additional & emended bibliography: Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 553--555 & 613. 1841; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 270 & 334. 1855; Körn., Linnaea 27: 581, 585, & 636--637. 1856; Körn. in Mart., Fl. Bras. 3 (1): 503. 1863; Moldenke, Phytologia 2: 375 (1947) and 19: 342--343, 473, & 475--478. 1970.

ERIOCAULON MACROPHYLLUM Ruhl.
Additional & emended bibliography: H. N. Ridl., Journ. Linn. Soc. Lond. Bot. 38: 332. 1908; Moldenke, Phytologia 19: 77 (1969) and 19: 416 & 417. 1970.

ERIOCAULON MELANOCEPHALUM Kunth
Additional & emended bibliography: Kunth, Enum. Pl. 3: 549 & 613. 1841; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 270 & 334. 1855; Körn., Linnaea 27: 578 & 601. 1856; Körn. in Mart., Fl. Bras. 3 (1): 298, 476, 498—501, & 506, pl. 63. 1863; Moldenke, Phytologia 1: 319, 351, 357, & 363 (1939), 2: 374 (1947), 3: 142 & 180 (1949), and 19: 346. 1970.

ERIOCAULON MICROCEPHALUM H.B.K.
Emended synonymy: Eriocaulon microcephalum Humb. & Kunth ex Kunth, Enum. Pl. 3: 548, 572, & 613. 1841 [not E. microcephalum Cham. & Schlecht., 1893, nor Hook. & Arn., 1854, nor Sellow, 1959].
Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 313 (1821) and ed. 2, 1: 585 & 586. 1840; Kunth, Enum. Pl. 3: 548, 572, 613, & 614. 1841; D. Dietr., Syn. Pl. 5: 263--264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 269 & 334. 1855; Körn., Linnaea 27: 600. 1856; Körn. in Mart., Fl. Bras. 3 (1): 470, 492, 502, 505, & 508. 1863; Moldenke, Phytologia 1: 316, 320, 350, 351, 357, 358, 360—362, & 364 (1939), 2: 134 & 491 (1948), and 19: 347. 1970.
It is of interest to note that Steudel (1840) lists E. triangulare L. both as a valid species (p. 586) and as a synonym of E. microcephalum (p. 585).

ERIOCAULON MINIMUM Lam.
Additional synonymy: Eriocaulon sexangulare Burm. ex Steud., Nom. Bot., ed. 2, 1: 585 & 586, in syn. 1840.
Additional bibliography: Steud., Nom. Bot. Phan., ed. 1, 313

(1821) and ed. 2, 1: 585 & 586. 1840; Kunth, Enum. Pl. 3: 551 & 613. 1841; Steud., Syn. Pl. Glum. 2: [Cyp.] 268 & 334. 1855; Körn., Linnaea 27: 585, 616, & 634—635. 1856; Körn. in Mart., Fl. Bras. 3 (1): 285. 1863; Moldenke, Phytologia 19: 339 & 347. 1970.

It is of interest to note that Steudel, in his 1821 work, reduces *E. minimum* to synonymy under *E. sexangulare* L., but in his 1840 work reinstates it as a valid species with "*E. sexangulare* Burm." as a synonym.

ERIOCAULON MODESTUM Kunth

Additional & emended bibliography: Kunth, Enum. Pl. 3: 547 & 613. 1841; D. Dietr., Syn. Pl. 5: 263. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 269, 280. & 334. 1855; Körn., Linnaea 27: 600. 1856; Körn. in Mart., Fl. Bras. 3 (1): 286, 476, 493, 500, & 507, pl. 62, fig. 2. 1863; Moldenke, Phytologia 2: 374 & 375 (1947), 3: 80 (1949), and 19: 347. 1970.

ERIOCAULON NANUM R. Br.

Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 313 (1821) and ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 571 & 613. 1841; D. Dietr., Syn. Pl. 5: 266. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 273 & 334. 1855; Körn., Linnaea 27: 580, 584, & 618. 1856; Körn. in Mart., Fl. Bras. 3 (1): 291. 1863; Moldenke, Phytologia 19: 348. 1970.

ERIOCAULON NEGLECTUM Ruhl.

Additional bibliography: Moldenke, Phytologia 18: 325. 1969.

Additional citations: BRAZIL: Mattogrosso: *Hatschbach & Guimarães 21848* (Z).

ERIOCAULON NEPALENSE Prescott

Emended synonymy: *Eriocaulon nepalense* Bong. ex Steud., Nom. Bot., ed. 2, 1: 585. 1840. *Eriocaulon quinquangulare* Wall. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 270 & 334, in syn. 1855 [not *E. quinquangulare* Bojer, 1964, nor Heyne, 1832, nor L., 1743, nor Mart., 1854, nor Wight, 1832, nor Willd., 1959]. *Eriocaulon nepalense* Kunth ex Körn., Linnaea 27: 637, in syn. 1856. *Eriocaulon viride* Körn., Linnaea 27: 581, 585, & 637—639. 1856.

Additional & emended bibliography: Bong., Ess. Monog. Erioc. 10 & 13. 1831; Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 554—555 & 613. 1841; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 270 & 334. 1855; Körn., Linnaea 27: 581, 585, & 637—639. 1856; Körn. in Mart., Fl. Bras. 3 (1): 503. 1863; Körn. in Miq., Ann. Mus. Bot. Lugd. 3: 163. 1867; Moldenke, Phytologia 2: 493. 1948; Moldenke, Biol. Abstr. 50: 12949 (1969) and 51: 459. 1970; Moldenke, Phytologia 19: 348, 418, 420, & 476. 1970.

ERIOCAULON NILAGIRENSE Steud.

Additional synonymy: *Eriocaulon nilagiricum* Steud., Syn. Pl.

Glum. 2: [Cyp.] 334, sphalm. 1855.

Additional & emended bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 271 & 334. 1855; Körn., Linnaea 27: 585 & 661—663. 1856; Körn. in Mart., Fl. Bras. 3 (1): 505. 1863; Moldenke, Phytologia 2: 377 (1947) and 19: 348, 412, & 491. 1970.

ERIOCAULON ODORATUM Dalz.

Additional & emended bibliography: Körn., Linnaea 27: 581, 583, 586, & 683—684. 1856; Körn. in Mart., Fl. Bras. 3 (1): 508. 1863; Moldenke, Phytologia 19: 349. 1970.

ERIOCAULON ORYZETORUM Mart.

Additional & emended bibliography: Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 552 & 613. 1841; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 270 & 334. 1855; Körn., Linnaea 27: 583, 585, & 639—641. 1856; Körn. in Mart., Fl. Bras. 3 (1): 501 & 503. 1863; Moldenke, Phytologia 2: 493. 1948; Moldenke, Alph. List Cit. 2: 461 (1948) and 4: 1102. 1949; Moldenke, Phytologia 19: 85 & 91 (1969) and 19: 424 & 447. 1970.

ERIOCAULON PALLIDUM R. Br.

Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 313 (1821) and ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 570 & 613. 1841; D. Dietr., Syn. Pl. 5: 265. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 273 & 334. 1855; Körn., Linnaea 27: 581, 585, & 635. 1856; Körn. in Mart., Fl. Bras. 3 (1): 285, 286, & 291. 1863; Moldenke, Phytologia 19: 349. 1970.

ERIOCAULON PALUSTRE Salzm.

Additional & emended bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 280 & 334. 1855; Körn., Linnaea 27: 599. 1856; Körn. in Mart., Fl. Bras. 3 (1): 288, 291, 475, 480, 500, & 506, pl. 61, fig. 1. 1863; Moldenke, Phytologia 19: 349. 1970.

ERIOCAULON PANAMENSE Moldenke

Additional & emended bibliography: Moldenke, Phytologia 1: 321, 350, 357, & 363. 1939; Moldenke, Alph. List Cit. 1: 326 (1946), 2: 609 (1948), and 4: 1141. 1949; Moldenke, Phytologia 18: 366. 1969.

ERIOCAULON PARKERI B. L. Robinson

Additional & emended bibliography: Moldenke, Phytologia 1: 321, 348, 349, 353—360, 362, & 363 (1939), 2: 491 (1948), and 3: 80. 1949; Lehr, Bull. Torr. Bot. Club 96: 721. 1969; Moldenke, Phytologia 19: 349—350. 1970.

Additional citations: VIRGINIA: Nansemond Co.: Fernald, Long, & Clement 15238 (Mi).

ERIOCAULON PELLUCIDUM Michx.

Additional synonymy: Eriocaulon plukenetianum Bong. ex Körn. in

Mart., Fl. Bras. 3 (1): 474. 1863.

Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 313. 1821; Bong., Ess. Monog. Erioc. 4, 16, & 17. 1831; Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 540, 541, 559, & 613. 1841; Steud., Syn. Pl. Glum. 2: [Cyp.] 268 & 334. 1855; Körn., Linnaea 27: 588—590. 1856; Körn. in Mart., Fl. Bras. 3 (1): 474. 1863; Robinson & Fern., Rhodora 11: 40. 1909; Fassett, Man. Aquat. Pl., ed. 2, 169. 1969; Moldenke, Phytologia 19: 409. 1970.

Gillet & Findlay describe this plant as common in floating bogs in Labrador, with white flowers, blooming there in July.

Additional citations: LABRADOR: Gillet & Findlay 5471 (N). QUEBEC: Pontiac Co.: Marie-Victorin, Rolland-Germain, & Blain 124 (Mi).

ERIOCAULON PLUMALE subsp. KINDIAE (H. Lecomte) Meikle

Additional bibliography: Hocking, Excerpt. Bot. A.6: 455. 1963; Moldenke, Biol. Abstr. 42: 1517. 1963; Anon., Assoc. Etud. Tax. Fl. Afr. Trop. Index 1962: 29. 1963; Moldenke, Phytologia 19: 410. 1970.

Additional citations: REPUBLIC OF GUINEA: Boismare 385 [Herb. Chillou 3903] (An); Chillou 644 (An), 717 (Rf).

ERIOCAULON PUBIGERUM Bong.

Additional & emended bibliography: Bong., Ess. Monog. Erioc. 28. 1831; Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 575 & 614. 1841; D. Dietr., Syn. Pl. 5: 267. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 279 & 334. 1855; Moldenke, Phytologia 18: 425. 1969.

ERIOCAULON PULCHELLUM Körn.

Additional & emended bibliography: Körn., Linnaea 27: 580, 585, & 621—624. 1856; Körn. in Mart., Fl. Bras. 3 (1): 283. 1863; Moldenke, Phytologia 19: 410 & 468. 1970.

ERIOCAULON PUSILLUM R. Br.

Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 313 (1821) and ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 571 & 614. 1841; D. Dietr., Syn. Pl. 5: 266. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 273 & 334. 1855; Körn., Linnaea 27: 580, 585, 616, 618, & 621. 1856; Körn. in Mart., Fl. Bras. 3 (1): 283. 1863; Moldenke, Phytologia 19: 410.1970.

ERIOCAULON PYGMAEUM Soland.

Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 313 (1821) and ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 570 & 613. 1841; D. Dietr., Syn. Pl. 5: 265—266. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 273 & 334. 1855; Körn., Linnaea 27: 584 & 617—618. 1856; Körn. in Mart., Fl. Bras. 3 (1): 286 & 291. 1863; Moldenke, Phytologia 19: 410. 1970.

ERIOCAULON QUINQUANGULARE L.

Additional & emended synonymy: *Eriocaulon argyraeum* Steud., Nom. Bot., ed. 2, 1: 585. 1840. *Eriocaulon triangulare* Bernhardi ex Kunth, Enum. Pl. 3: 557 & 614, in syn. 1841 [not *E. triangulare* L., 1762]. *Eriocaulon argenteum* Wight ex Kunth, Enum. Pl. 3: 557 & 612, in syn. 1841. *Eriocaulon argenteum* Mart. & Wall. ex D. Dietr., Syn. Pl. 5: 264. 1852. *Eriocaulon quinquangulare e Nepalia* Wall. ex Kunth, Enum. Pl. 3: 614, in syn. 1841.

Additional & emended bibliography: Henckel, Nom. Bot. 68. 1797; Raeusch., Nom. Bot. 30. 1797; Pers., Syn. Pl. 1: 110. 1805; Steud., Nom. Bot. Phan., ed. 1, 313. 1821; Bong., Ess. Monog. Erioc. 2 & 8. 1831; Steud., Nom. Bot., ed. 2, 1: 585 & 586. 1840; Kunth, Enum. Pl. 3: 554, 556—558, 567, 612, & 614. 1841; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 271—272, 333, & 334. 1855; Körn., Linnaea 27: 581, 585, 638, 639, 641—645, 647, 648, & 652. 1856; Körn. in Mart., Fl. Bras. 3 (1): 280, 283, 285, 501, 503, & 505. 1863; Seshagiri Rao, Journ. Bombay Nat. Hist. Soc. 55: 437. 1958; Moldenke, Phytologia 2: 377 (1947) and 19: 410—411, 418, 420, 440, 449, 462, 477, & 488. 1970.

Kunth (1841), on page 614 of his index, lists an "*Eriocaulon quinquangulare e Nepalia* Wall." and cites it to page 558, where it does not seem to appear, but apparently he intends it as a synonym of *E. argenteum* Mart., which is now regarded as *E. quinquangulare* L.

Steudel (1840) regarded *E. striatum* Lam. and *E. trilobum* Hamilt. as synonyms of *E. quinquangulare* L., but the former is a valid species and the latter is now known as *E. sollyanum* Royle.

ERIOCAULON QUINQUANGULARE var. MARTIANUM Wall.

Additional bibliography: Steud., Nom. Bot., ed. 2, 1: 585. 1840; Kunth, Enum. Pl. 3: 558 & 613. 1841; Steud., Syn. Pl. Glum. 2: [Cyp.] 271 & 334. 1855; Körn. in Mart., Fl. Bras. 3 (1): 285. 1863; Moldenke, Phytologia 18: 432, 435, & 447. 1969.

ERIOCAULON RAVENELII Chapm.

Additional & emended bibliography: Moldenke, Phytologia 1: 322, 349, 354, 360, & 362 (1939), 2: 491 & 494 (1948), 3: 80 (1949), and 19: 411. 1970.

ERIOCAULON ROBUSTIUS (Maxim.) Mak.

Additional bibliography: Moldenke, Phytologia 2: 375—377 & 379 (1947), 2: 493 (1948), 3: 143 & 144 (1949), and 19: 412 & 478. 1970.

ERIOCAULON ROBUSTUM Steud.

Additional & emended bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 271, 272, 333, & 334. 1855; Körn., Linnaea 27: 586, 658, & 674—676. 1856; Körn. in Mart., Fl. Bras. 3 (1): 508. 1863; Moldenke, Phytologia 19: 412. 1970.

ERIOCAULON ROSULATUM Körn.

Additional & emended bibliography: Körn., Linnaea 27: 600. 1856; Körn. in Mart., Fl. Bras. 3 (1): 298, 486—488, 500, & 507, pl. 61, fig. 3. 1863; Moldenke, Phytologia 19: 91. 1969.

ERIOCAULON ROUXIANUM Steud.

Additional & emended bibliography: Steud., Syn. Pl. Glum. 2: [Cyp.] 270—271 & 334. 1855; Körn., Linnaea 27: 580, 585, & 626—627. 1856; Körn. in Mart., Fl. Bras. 3 (1): 285. 1863; Moldenke, Phytologia 19: 91. 1969.

ERIOCAULON SCARIOSUM R. Br.

Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 313 (1821) and ed. 2, 1: 586. 1840; Kunth, Emum. Pl. 3: 568—571 & 614. 1841; D. Dietr., Syn. Pl. 5: 265. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 270, 273, & 334. 1855; Körn., Linnaea 27: 585 & 652—655. 1856; Körn. in Mart., Fl. Bras. 3 (1): 500 & 503. 1863; Moldenke, Phytologia 2: 493 & 494 (1948) and 19: 412—413. 1970; Moldenke, Biol. Abstr. 51: 459. 1970.

ERIOCAULON SCHIEDEANUM Körn.

Additional & emended bibliography: Körn., Linnaea 27: 600. 1856; Körn. in Mart., Fl. Bras. 3 (1): 492—493 & 508. 1863; Moldenke, Phytologia 1: 322—323, 350, 351, & 360 (1939) and 19: 413. 1970.

ERIOCAULON SCHIPPII Standl.

Additional & emended bibliography: Moldenke, Phytologia 1: 323, 350, & 361. 1939; Standl. & Steyerm., Fieldiana Bot. 24: 375—377. 1958; Moldenke, Phytologia 19: 413. 1970.

ERIOCAULON SELLOWIANUM Kunth

Emended synonymy: Eriocaulon sellowianum var. α Körn. in Mart., Fl. Bras. 3 (1): 485—486. 1863. Eriocaulon sellowianum var. β Körn. in Mart., Fl. Bras. 3 (1): 485—486. 1863.

Additional & emended bibliography: Kunth, Enum. Pl. 3: 545, 546, & 614. 1841; D. Dietr., Syn. Pl. 5: 263. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 269 & 334. 1855; Körn., Linnaea 27: 600. 1856; Körn. in Mart., Fl. Bras. 3 (1): 279, 280, 476, 483, 485—486, 493, 500, & 507, pl. 61, fig. 2. 1863; Moldenke, Phytologia 2: 375 (1947), 2: 494 (1948), and 19: 101—104. 1969.

ERIOCAULON SEPTANGULARE With.

Additional synonymy: Eriocaulon septangulare With. & Burm. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 334. 1855. Eriocaulon septangulare L. ex Körn. in Mart., Fl. Bras. 3 (1): 294. 1863.

Additional & emended bibliography: Steud., Nom. Bot. Phan., ed. 1, 313 & 550. 1821; Bong., Ess. Monog. Erioc. 4, 8, 9, 13, 16, & 17. 1831; Steud., Nom. Bot., ed. 2, 1: 585 & 586. 1840; Kunth, Enum. Pl. 3: 540—541, 557, 568, 613, & 614. 1841; D. Dietr., Syn. Pl. 5: 263. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 268 & 334.

1855; Körn., Linnaea 27: 584, 588--590, 592, & 596. 1856; Körn. in Mart., Fl. Bras. 3 (1): 280 & 502--505. 1863; Robinson & Fern., Rhodora 11: 40. 1909; Moldenke, Phytologia 1: 323--327 & 348--364 (1939), 2: 373, 377, & 379 (1947), 2: 491 & 494 (1948), and 3: 80 & 142. 1949; Fassett, Man. Aquat. Pl., ed. 2, 169. 1969; Moldenke, Phytologia 19: 413--414 & 460. 1970.

ERIOCAULON SETACEUM L.

Additional & emended bibliography: Henckel, Nom. Bot. 68. 1797; Raeusch., Nom. Bot. 30. 1797; Pers., Syn. Pl. 1: 110. 1805; Steud., Nom. Bot. Phan., ed. 1, 313. 1821; Bong., Ess. Monog. Erioc. 2 & 13. 1831; Steud., Nom. Bot., ed. 2, 1: 586. 1840; Kunth, Enum. Pl. 3: 549, 550, & 614. 1841; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 270 & 334. 1855; Körn., Linnaea 27: 578, 584, & 601--604. 1856; Körn. in Mart., Fl. Bras. 3 (1): 476, 501, 505, & 508. 1863; Moldenke, Phytologia 19: 414. 1970.

ERIOCAULON SEXANGULARE L.

Additional synonymy: *Eriocaulon quadrangulare* L. ex Raeusch., Nom. Bot. 30, nom. nud. 1797. *Eriocaulon hexangulare* L. ex Raeusch., Nom. Bot. 30, nom. nud. 1797 [not *E. hexangulare* Kunth, 1893, nor Wall., 1937]. *Eriocaulon nitidum* Hort. ex Steud., Nom. Bot., ed. 2, 1: 585 & 586, in syn. 1840. *Eriocaulon wallichianus* Mart. & Wall. ex D. Dietr., Syn. Pl. 5: 265. 1852. *Eriocaulon quinquangulare* Lour. ex D. Dietr., Syn. Pl. 5: 265. 1852.

Additional & emended bibliography: Raeusch., Nom. Bot. 30. 1797; Henckel, Nom. Bot. 68. 1797; Pers., Syn. Pl. 1: 110. 1805; Steud., Nom. Bot. Phan., ed. 1, 313. 1821; Bong., Ess. Monog. Erioc. 2, 3, & 8. 1831; Steud., Nom. Bot., ed. 2, 1: 585 & 586 (1840) and 2: 37. 1841; Kunth, Enum. Pl. 3: 551--552, 557, 558, 563--567, 569, 613, & 614. 1841; D. Dietr., Syn. Pl. 5: 264 & 265. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 270--272, 333, & 334. 1855; Körn., Linnaea 27: 578, 579, 583, 584, 586, 613--618, & 687--691. 1856; Körn. in Mart., Fl. Bras. 3 (1): 280, 286, 288, 289, 293, 475, 501, 503, 505, & 508. 1863; Moldenke, Phytologia 2: 378 (1947), 2: 493 & 494 (1948), 3: 143 (1949), and 19: 414--415, 443, 450, 451, 475--478, 484, & 491. 1970.

It is very probable that the *E. quinquangulare* Lour. listed by Dietrich (1852) and described by him as "culmo 5-angulari; fol. ensiformibus; capitulo globoso basi truncato albicante. In Cochinchina. (!)" is merely a misprint for *E. quadrangulare* Lour. and therefore belongs in the synonymy of *E. sexangulare* L.

Steudel (1840, 1841) gives *E. tenue* Hamilt. and *Leucocephala spathacea* Roxb. as synonyms of *Eriocaulon sexangulare* L., but these two names belong in the synonymy of *E. cinereum* R. Br. instead; in his 1821 work he lists *E. striatum* Lam. as another synonym, but this is regarded by me as a distinct and valid species.

ERIOCAULON SOLLYANUM Royle

Emended synonymy: Eriocaulon trilobum Ham. ex Körn., Linnaea 27: 581, 585, 645--647, & 652. 1856.

Additional & emended bibliography: Körn., Linnaea 27: 581, 585, 645--647, & 652. 1856; Körn. in Mart., Fl. Bras. 3 (1): 283, 501, 505, & 506. 1863; K. U. Kramer, Excerpt. Bot. A.6: 33. 1963; Moldenke, Phytologia 19: 440, 452, & 478. 1970.

ERIOCAULON SONDERIANUM Körn.

Additional & emended bibliography: Körn., Linnaea 27: 586 & 669--671. 1856; Körn. in Mart., Fl. Bras. 3 (1): 300 & 503. 1863; N. E. Br. in Thiselt.-Dyer, Fl. Cap. 7: 53, 55, & 776. 1897; Moldenke, Phytologia 19: 423 & 457. 1970.

ERIOCAULON SPARGANIOIDES Bong.

Additional & emended bibliography: Körn., Linnaea 27: 601. 1856; Körn. in Mart., Fl. Bras. 3 (1): 499--500 & 508. 1863; Moldenke, Phytologia 19: 440. 1970.

ERIOCAULON SPRUCEANUM Körn.

Additional & emended bibliography: Körn. in Mart., Fl. Bras. 3 (1): 488--489 & 507. 1863; Moldenke, Biol. Abstr. 50: 12948. 1969; Moldenke, Phytologia 19: 440--442. 1970.

The Garcia-Barriga & Jaramillo Mejia 17128 collection cited below is a mixture with f. viviparum Moldenke.

Additional citations: COLOMBIA: Vaupés: Garcia-Barriga & Jaramillo Mejia 17128, in part (Ac).

ERIOCAULON SPRUCEANUM f. VIVIPARUM Moldenke

Additional bibliography: Moldenke, Biol. Abstr. 50: 12948. 1969; Moldenke, Phytologia 19: 441 & 442. 1970.

The Garcia-Barriga & Jaramillo Mejia 17128 collection cited by me in a previous installment of these notes is actually a mixture with typical E. spruceanum Körn.

ERIOCAULON STELLULATUM Körn.

Additional & emended bibliography: Körn., Linnaea 27: 579, 584, 620--621, & 692. 1856; Körn. in Mart., Fl. Bras. 3 (1): 284 & 475. 1863; Moldenke, Phytologia 19: 442--443 & 464. 1970.

ERIOCAULON STRIATUM Lam.

Additional & emended bibliography: Körn., Linnaea 27: 272, 585, & 650--652. 1856; Körn. in Mart., Fl. Bras. 3 (1): 286 & 505. 1863; Moldenke, Phytologia 19: 447--449. 1970.

ERIOCAULON TENUIFOLIUM Klotzsch

Additional synonymy: Eriocaulon tenuifolium Kunth ex Körn. in Mart., Fl. Bras. 3 (1): 489, sphalm. 1863.

Additional & emended bibliography: Körn., Linnaea 27: 600. 1856; Körn. in Mart., Fl. Bras. 3 (1): 489, 496, 498, & 507. 1863; Moldenke, Phytologia 2: 492 (1948) and 19: 454--456. 1970.

ERIOCAULON TEXENSE Körn.

Additional & emended bibliography: Körn., Linnaea 27: 584 & 594--596. 1856; Körn. in Mart., Fl. Bras. 3 (1): 476 & 503. 1863; Moldenke, Phytologia 1: 327, 350, 354, & 360 (1939), 2: 153 (1946), 2: 373 (1947), and 19: 459--461. 1970.

The Lonard 1956, distributed as E. texense, is actually E. decangulare f. parviceps Moldenke.

ERIOCAULON THUNBERGII Wikstr.

Additional & emended bibliography: Körn., Linnaea 27: 586 & 677--679. 1856; Körn. in Mart., Fl. Bras. 3 (1): 293. 1863; Moldenke, Phytologia 19: 462 & 486. 1970.

ERIOCAULON THWAITESII Körn.

Additional synonymy: Eriocaulon mariae Fyson, Kew Bull. Misc. Inf. 1914: 331. 1914.

Additional & emended bibliography: Körn., Linnaea 27: 580, 585, & 627--628. 1856; Körn. in Mart., Fl. Bras. 3 (1): 285. 1863; Moldenke, Phytologia 19: 443, 462--464, 476, 477, & 483. 1970.

ERIOCAULON TRANSVAALICUM N. E. Br.

Additional & emended bibliography: N. E. Br. in Thiselt.-Dyer, Fl. Cap. 7: 53, 54, & 776. 1897; Moldenke, Phytologia 19: 458, 466, 467, & 469--471. 1970.

ERIOCAULON TRUNCATUM Hamilt.

Additional & emended bibliography: Körn., Linnaea 27: 581, 585, & 630--631. 1856; Körn. in Mart., Fl. Bras. 3 (1): 283--287, 298, 503, & 505. 1863; Moldenke, Phytologia 2: 376 (1947) and 2: 493 & 494. 1948; Brunig, Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 307 & 311. 1965; Moldenke, Phytologia 19: 464, 473--480, & 482. 1970.

ERIOCAULON WIGHTIANUM Mart.

Additional bibliography: Körn., Linnaea 27: 585, 658--661, 663, & 669. 1856; Körn. in Mart., Fl. Bras. 3 (1): 503. 1863; Moldenke, Biol. Abstr. 50: 12948. 1969; Moldenke, Phytologia 19: 490--492. 1970.

ERIOCAULON WILLDENOVIANUM Moldenke

Additional & emended bibliography: Körn., Linnaea 27: 578, 583, 584, 586, 598, & 690--691. 1856; Körn. in Mart., Fl. Bras. 3 (1): 288, 474, 505, & 506. 1863; Moldenke, Phytologia 2: 379 (1947), 2: 494 (1948), and 19: 492--496. 1970.

At the very beginning of his description Kunth (1841) states "E. longifolium Nees ab Esenb. in Willd. herb. no. 2369. (excl. frustulo dextro?). Folia subpedalia, 2 lineas lata. Vaginae 4--4 1/2 -pollicares. Pedunculi 12--15-pollicares. Bracteae, flores feminei (masculi a me haud visi) et semina prorsus ut in planta Chapelieriana infra descripta, nisi sepala interiora pilosiora et semina perspicuis et densius hirtella, praesertim humectata." This apparently is a different collection from the *2359* which he cites later in the description. It would appear that no. *2369* was labeled *E. longifolium* and no. *2359* was labeled *E. sexangulare* in the Willdenow herbarium. The Chapelier specimen seen by me in the Berlin herbarium and cited below, does not match well the majority of specimens ascribed to *E. willdenovianum*, since its leaves are short but narrow. Its label is inscribed "*E. scariosum* Br." and its flowers are described as "tetrandrous".

The type of *E. sexangulare* Willd. is "Willd. herb. no. 2359. fol. 1. (excl. frustulo dextro, quod certissime *E. quinquangulare*.)" according to Kunth (1841). The *E. sexangulare* of Linnaeus is, of course, a valid species, but the homonyms referred to in the synonymy of *E. willdenovianum* and attributed to "Auct." and to Martius are synonyms of *E. cinereum* R. Br., that credited to Burman is *E. minimum* Lam., and that credited to Heyne is *E. infirmum* Steud.

The Hooker (1893) reference in the bibliography of this species is often dated "1894", but actually pages 449—672 of this work appeared in 1893. Merrill (1921) cites the Hallier reference to volume "24" in error. The Erlandsson reference (1942) is sometimes cited as "1940", but the pages involved here actually were not issued until February 25, 1942. Erlandsson also unites what he calls *E. longifolium* Nees with *E. sexangulare* L.

Maximowicz (1893) says "*E. longifolium* Nees herb. in Kunth, Enum. III, 567. Koernicke in Linnaea, XXVII, 690, quod prostat e Hongkong (*Fortune! n. 120*), Malacca (*Cuming!*) et Ceylon!, ab *E. Wallichiano* distinctum dicitur floribus dimeris et bracteis acutiusculis nec breve acuminatis, sed in specimine Fortuneano horti bot. Petrop. video, cum Benthamio, flores trimeros dimeris vix rariores, bracteae autem mihi eaedem visae sunt."

Hochreutiner (1908) cites *Guillot 20* from Madagascar, but this collection proves to be *E. sexangulare* L. and is so cited by me in this present series of notes. Hallier (1916) cites *Cuming 2328* from the Philippine Islands, but this collection has also proved to be *E. sexangulare*. Merrill (1921) cites *Hallier 1172*, *Korthals s.n.*, *Schlechter 13209*, and *Teijsmann 11556* from Borneo and *Clemens 9635* from Sabah. Van Royen (1959, 1965) cites *Van Royen 4094*, *4501*, *4838*, & *4909* from New Guinea.

Material of *E. willdenovianum* has been misidentified and distributed in herbaria as *E. australe* R. Br. On the other hand, the *Afzelius s.n.* [Tamatave, 26.7.1912], *Cuming 2328*, *Fortune s.n.* [Hongkong], *Hosokawa 8820*, *Metcalf & Ging 5073*, *Schlieben 10780*, *L. Y. Tai 11618*, and *Yates 2486*, all distributed as *E. longifolium*, are actually *E. sexangulare* L.; *H. Hallier 1172* is a mixture of *E. sexangulare* L. and *E. truncatum* Hamilt.; and *Mjoberg 211* is *E.*

willdenovianum f. viviparum Moldenke.

Citations: MADAGASCAR: Alleizette s.n. (P); Chapelier s.n. (B); Decary 4780 (P), 5306 (P), 6457 (P), s.n. (P); Geay 7918 (P), 8163 (P); Humblot 348 (B, P); Petit-Thouars 2 (P); F. V. Thompson 150 (Br). CEYLON: Alston 1069 (Ca—360966, K); J. Fraser 55 (W—45306); G. W. Walker s.n. [Herb. Hook.] (Ut—416). THAILAND: Smitinand & Abbe 6158 [Herb. Roy. Forest Dept. 24384] (Z); Sørensen, Larsen, & Hansen 723 (S). MALAYA: Johore: Franck 389 (Cp). Malacca: Gaudichaud 100 (B); W. Griffith s.n. (B). Pahang: M. R. Henderson 24038 (N). Singapore: Kuntze 6063 (N); Schottmüller 116 (B). State undetermined: Burmann s.n. (V, V, V). INDONESIA: GREATER SUNDA ISLANDS: Balambangan: D. D. Wood 1725 (Ca—241564). Banka: Teijsmann 3464 H.B. (Ut—321). Celebes: Kjellberg 3797 (S, S). Sabah: Burbidge s.n. (D—824285). Sarawak: Clemens & Clemens 20822 [field no. 7450] (N). Sumatra: Rainer-Kesselitz s. n. [Feb. '85] (V—4653); Toroes 4285 (W—1680946). MELANESIA: NEW GUINEA: Dutch New Guinea: Van Royen 4501 (N). Papua: Brass 5751 (Ca—1157997, N), 5752 (Ca—1157996, N, W—1943115), 7603 (N), 7936 (N), 7951 (N), 8576 (N), 8638 (N). Sudest Island: Brass 28178 (W—2409103). LOCALITY OF COLLECTION UNDETERMINED: Herb. Hooker s.n. (K).

ERIOCAULON WILLDENOVIANUM f. VIVIPARUM (Moldenke) Moldenke

Synonymy: Eriocaulon longifolium f. viviparum Moldenke, Phytologia 7: 86. 1959.

Bibliography: Moldenke, Phytologia 7: 86. 1959; Moldenke, Résumé Suppl. 1: 13 & 25. 1959; Moldenke, Biol. Abstr. 35: 1688. 1960; Hocking, Excerpt. Bot. A.4: 592. 1962; Moldenke, Résumé Suppl. 17: 6. 1968.

Recent collectors describe this plant as an herb to 10 inches tall, growing on rocks below waterfalls, flowering and fruiting in February.

Citations: INDONESIA: GREATER SUNDA ISLANDS: Borneo: Mondi 278 (Ut—34211a—type). Sarawak: Mjoberg 211 (Ca—234172, N); Native collector 474 (W—1290539); Purseglove P.5568 (N).

ERIOCAULON WILLIAMSII Moldenke

Bibliography: Moldenke, N. Am. Fl. 19 (1): 20 & 36. 1937; Moldenke, Phytologia 1: 327—328, 350, 359, & 363. 1939; Moldenke, Carnegie Inst. Wash. Publ. 522: 141—142. 1940; Moldenke in Woodson & Schery, Ann. Mo. Bot. Gard. 31: 68. 1944; Moldenke, Alph. List Cit. 1: 326. 1946; Moldenke, Known Geogr. Distrib. Erioc. 4 & 42. 1946; Hill & Salisb., Ind. Kew. Suppl. 10: 86. 1947; Moldenke, Alph. List Cit. 3: 736 (1949) and 4: 1133. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 36, 41, & 206. 1949; Standl. & Steyerm., Fieldiana Bot. 24: 375 & 377. 1958; Moldenke, Résumé 43, 48, & 484. 1959.

Emended citations: BRITISH HONDURAS: W. C. Meyer 134 (F—635926).

ERIOCAULON WOODII N. E. Br.

Synonymy: Eriocaulon natalense Schinz, Mém. Herb. Boiss. 10: 76. 1900. Eriocaulon latifolium Nees apud Schinz, Mém. Herb. Boiss. 10: 76, in syn. 1900 [not E. latifolium Arech., 1902, nor Bong., 1831, nor J. Sm., 1809].

Bibliography: N. E. Br. in Thiselt.-Dyer, Fl. Cap. 7: 53, 57, & 776. 1897; Ruhl. in Engl., Bot. Jahrb. 27: 70 & 77. 1899; Schinz, Mém. Herb. Boiss. 10: 76. 1900; Ruhl. in Engl., Pflanzenreich 13 (4-30): 61, 70, 71, 286, & 288, fig. 8. 1903; Thiselt.-Dyer, Ind. Kew. Suppl. 2: 70. 1904; Engl. & Drude, Veget. Erde 9 (2): 263. 1908; Marlot, Fl. S. Afr. 4: 66. 1915; Stapf, Ind. Lond. 3: 91. 1930; Moldenke, Known Geogr. Distrib. Erioc. 22, 37, & 42. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 122, 206, & 207. 1949; H. Hess, Bericht. Schweiz. Bot. Gesell. 65: 150, 151, & 267, pl. 8, fig. 5. 1955; Moldenke, Résumé 153, 290, & 484. 1959; Moldenke, Résumé Suppl. 14: 3. 1966; Moldenke, Phytologia 19: 324, 342, 445, 446, & 466. 1970.

Illustrations: Ruhl. in Engl., Pflanzenreich 13 (4-30): 71, fig. 8. 1903; Engl. & Drude, Veget. Erde 9 (2): 263. 1908; Marlot, Fl. S. Afr. 4: 66. 1915; H. Hess, Bericht. Schweiz. Bot. Gesell. 65: pl. 8, fig. 5. 1955.

The type of this species is J. M. Wood 3053, collected in a swamp near Murchison, Natal, South Africa. Brown (1897) notes that "This appears to be an aquatic species. In the Kew specimens, the flower heads of which are somewhat malformed, the receptacle is flat and appears to be glabrous. The flowers may not have attained their normal development, but the remarkably flaccid, denticulate sepals well distinguish this from all other South African species."

The E. latifolium of Smith, referred to in the synonymy above, is a valid species, but the homonym accredited to Arechavaleta is a synonym of E. arechavaletae Moldenke, while that of Bongard belongs in the synonymy of Paepalanthus serralapensis Moldenke.

Hess (1955) suggests that E. woodii may be conspecific with E. stoloniferum Welw.; if so, then the Welwitsch epithet would have to be displaced by the older E. woodii.

Citations: MOUNTED ILLUSTRATIONS: Engl., Pflanzenreich 13 (4-30): 71, fig. 8 (B).

ERIOCAULON WOODII var. MINOR Ruhl.

Bibliography: Ruhl. in Engl., Pflanzenreich 13 (4-30): 70 & 288. 1903; Moldenke, Known Geogr. Distrib. Erioc. 22 & 42. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 122 & 207. 1949; Moldenke, Phytologia 3: 470. 1951; H. Hess, Bericht. Schweiz. Bot. Gesell. 65: 151. 1955; Moldenke, Résumé 153 & 484. 1959; Moldenke, Résumé Suppl. 14: 3. 1966; Moldenke, Phytologia 19: 446. 1970.

Wild describes this variety as stoloniferous, growing both on wet riverbanks and in the water itself. It has been found at altitudes of 500--1665 meters, flowering and fruiting in October. Rudatis 1420 in the Munich herbarium is inscribed "Eriocaulon woodii N. E. Br., nov. sp.", but this collection is not the type collection of E. woodii as designated by Brown. The type of E. woodii var. minor is J. M. Wood 524, deposited in the Berlin herbarium.

The comment by Wild, mentioned above, is of particular interest in view of the suggestion by Hess (1955) that E. woodii N. E. Br. and E. stoloniferum Welw. may be conspecific.

Additional citations: RHODESIA: Wild 5521 (Mi). SOUTH AFRICA: Natal: Rudatis 1420 (Mu—411, S, S); J. M. Wood 524 (B--type, Z--isotype).

ERIOCAULON WOODSONIANUM Moldenke

Bibliography: Moldenke in Woodson & Schery, Ann. Mo. Bot. Gard. 27: 268--269. 1940; Moldenke, Ann. Mo. Bot. Gard. 31: 67. 1944; Moldenke, Known Geogr. Distrib. Erioc. 4 & 42. 1946; Moldenke, Alph. List Cit. 1: 163. 1946; Hill & Salisb., Ind. Kew. Suppl. 10: 86. 1947; Moldenke, Alph. List Cit. 2: 429. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 41 & 207. 1949; Moldenke, Phytologia 3: 470. 1951; Moldenke, Résumé 48 & 484. 1959.

Recent collectors describe this species as an herb with white flower-heads, growing in moist areas with standing water and mud, flowering in February.

Additional citations: PANAMA: Herrera: Stern, Eyde, & Ayensu 1701 (Mi, W—2490216).

ERIOCAULON XENOPODION Koyama

Synonymy: Eriocaulon xenopodium Koyama ex Moldenke, Résumé Suppl. 15: 20, in syn. 1967.

Bibliography: Koyama, Philip. Journ. Sci. 84: 374—375 & 377, pl. 4. 1956; Moldenke, Résumé 178 & 484. 1959; G. Taylor, Ind. Kew. Suppl. 13: 52. 1966; Moldenke, Résumé Suppl. 15: 20. 1967.

Illustrations: Koyama, Philip. Journ. Sci. 84: pl. 4. 1956.

The type of this distinctive bulbous species was collected by Bunzô Hayata at Nayak, Thailand, on December 16, 1921. Koyama (1956) notes that "This strange taxon is outwardly allied to E. ubonense by its heads. Seeing herbaria, I at first thought that the above sheets were mixture of some heads of Eriocaulon and vegetative parts of Xyris, so large and distinct tuber this species has." Larsen and his associates collected the species in sphagnum bogs at 1350 meters altitude. It has been collected in flower and fruit in July and December.

Citations: THAILAND: Hayata s.n. [Doi Step, 22/XII/1922] (Z); Larsen, Smitinand, & Warncke 2 (Ac, Rf).

ERIOCAULON XERANTHEMUM Mart.

Synonymy: Eriocaulon pygmaeum Dalz. in Hook., Kew Journ. 3:

281—282. 1851 [not E. pygmaeum Körn., 1863, nor Mart., 1841, nor Soland., 1809]. Eriocaulon xeranthemum Mart. & Wall. ex D. Dietr., Syn. Pl. 5: 264. 1852.

Bibliography: Mart. in Wall., Pl. Asiat. Rar. 3: 29. 1832; Wall., Numer. List 208 ["207"]. 1832; Royle, Illustr. Bot. Himal. 409. 1840; Steud., Nom. Bot., ed. 2, 1: 586. 1840; Kunth, Enum. Pl. 3: 555 & 614. 1841; Dalz. in Hook., Kew Journ. 3: 281—282. 1851; D. Dietr., Syn. Pl. 5: 264. 1852; Steud., Syn. Pl. Glum. 2: [Cyp.] 270 & 334. 1855; Körn., Linnaea 27: 580, 585, & 624—626. 1856; C. Müll. in Walp., Ann. 5: 926 & 935—936 (1860) and 6: 1171. 1861; Dalz. & Gibs., Bomb. Fl. 280. 1861; Körn. in Mart., Fl. Bras. 3 (1): 283 & 503. 1863; Hieron. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 2 (4): 24. 1888; Hook. f., Fl. Brit. Ind. 6: 584—585. 1893; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 879 & 880. 1893; Prain, Bengal Pl., ed. 1, 1127. 1903; Ruhl. in Engl., Pflanzenreich 13 (4-30): 65, 96, 287, & 288. 1903; E. D. Merr., Bibl. Enum. Born. Pl. 111. 1921; Fyson, Journ. Indian Bot. 2: 200, 201, & 317. 1921; Haines, Bot. Bihar & Orissa 6: 1067 & 1070. 1924; C. E. C. Fischer in Gamble, Fl. Presid. Madras, ed. 1, 9: 1614 & 1620. 1931; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 879 & 880. 1946; Moldenke, Known Geogr. Distrib. Erioc. 23, 24, 26, 27, 39, & 42. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 125, 127, 129, 139, 145, & 207. 1949; Moldenke, Phytologia 3: 470. 1951; C. E. C. Fischer in Gamble, Fl. Presid. Madras, ed. 2, 8 [3]: 1124, 1127--1128, & 1333. 1956; Moldenke, Résumé 159, 160, 163, 165, 180, 192, 291, & 484. 1959; Moldenke, Résumé Suppl. 1: 11. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 879 & 880. 1960; Prain, Bengal Pl., ed. 2, 2: 849. 1963; Subramanyam & Henry, Bull. Bot. Surv. India 8: 214. 1966; Sebastine & Ramamurthy, Bull. Bot. Surv. India 8: 176. 1966; Moldenke, Résumé Suppl. 15: 8 (1967) and 16: 9. 1968; Moldenke, Phytologia 18: 122, 250, 310, & 428 (1969), 19: 36 (1969), and 19: 348, 468, 476, & 477. 1970.

Illustrations: Fyson, Journ. Indian Bot. 2: 201. 1921.

Eriocaulon xeranthemum is based on W. Gomez 5 & 6, which were distributed as Wallich 6081a & 6081c, from Nepal and from Tavoy [the latter locality being in Tenasserim, Burma], respectively, although Martius' original description (1832) says "Crescit in Napalia (N. Wallich 1821); in Tavoy (W. Gomez)" — the "1821" appears to be the year when the collection was made, rather than a number. The W. Gomez 6 sheet in the herbarium of the Jardin Botanique de l'Etat at Brussels has a letter attached from Wallich to Martius, dated January 17, 1832. Wallich (1832) actually cites three collections under this name: "6081a Napalia 1821; 6081b Silhet hD; 6081c Tavoy W. Gom."

The E. pygmaeum of Solander, referred to in the synonymy above, is a valid species, but the homonym attributed to Körnicke is a synonym of E. koernickei Britten, while that attributed to Martius is in the synonymy of Paepalanthus bifidus (Schrad.) Kunth.

It should be noted that Hooker (1893) places *E. xeranthemoides* Van Heurck & Muell.-Arg. in the synonymy of *E. xeranthemum* Mart., but this name belongs more properly in the synonymy of *E. togoënse* Moldenke, an African plant.

The description and discussion of *E. xeranthemum* by Fyson (1921) are worth quoting here: "Leaves 2/3 — 1/2 in. Scapes slightly longer or shorter. Disc of head 1/10 — 1/8 in. Involucral bracts much longer, glistening white. Receptacle globose, floral bracts broadly obovate truncate, hairy at the tip. Female sepals narrow 3 equal or unequal or 2 only.....Central Himalayas, Nepal; Assam, Khasia, Peninsular India, Malabar, Cochin, etc. Hooker in F. B. I. describes the receptacle as hairy, but wrongly. Martius.....says the hairiness is the only real reason for distinguishing *E. xeranthemoides* from this species. Hooker also gives the sepals as 2. Koernicke......gives them as 3, but unequal. I find both the petals and sepals of the female flowers very in size among themselves and one sepal may be linear or absent."

The species has been found growing in swampy ground among grasses, at altitudes of 50 to 4000 feet, flowering and fruiting in July and September. Prain (1903) records it from Chota Nagpur and refers to it as "An annual, terrestrial, tufted herb". Sebastine & Ramamurthy (1966) report it as "abundant" in Kerala and cite their no. *14361*, while Subramanyam & Henry (1966) cite their no. *8658* from Madhya Pradesh. Merrill (1921) cites *Gibbs 3077* from Sabah. The initial letter of the specific epithet of both scientific binomials involved is often uppercased by some authors, but without any valid reason.

Material of this taxon has been misidentified and distributed in herbaria as *E. minutum* Hook. f. On the other hand, the *Stocks, Law, &c. s.n.* [Malabar, Concan &c.], distributed as *E. xeranthemum*, is actually *E. heterolepis* Steud., while *Herb. Bot. Surv. India s.n.* [27.9.56] is *E. truncatum* Hamilt.

Additional citations: NEPAL: *W. Gomez 5* (Br—cotype); *Wallich 6081* (Mu--265—cotype), *6081a* (M—cotype). INDIA: Bombay: *Santapau 2928* (N, Xa); *Stocks, Law, &c. 15* (B). Khasi States: *Hooker & Thomson s.n.* [Mont. Khasia. 4000 ped.] (Br, M, Mu—264, S, Ut--93611b). Mysore: *S. N. Ramaswamy 12* (Z). BURMA: Tenasserim: *W. Gomez 6* (Br—cotype, N--photo of cotype, Z--photo of cotype); *Rhind 231* (N); *Wallich 6081c* (B—cotype).

ERIOCAULON YAOSHANENSE Ruhl.

Bibliography: Ruhl., Notizbl. Bot. Gart. Berlin 10: 1043—1044. 1930; A. W. Hill, Ind. Kew. Suppl. 8: 87. 1933; Moldenke, Known Geogr. Distrib. Erioc. 25 & 42. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 132 & 207. 1949; Moldenke, Résumé 170 & 484. 1959.

ERIOCAULON YOSHINOI Nakai

Bibliography: Nakai, Bull. Géogr. Bot. 21: 139. 1911; Prain, Ind. Kew. Suppl. 5, pr. 1, 97. 1921; Nakai & Honda, Nov. Pl. Jap. 6: 12 & 87. 1940; Moldenke, Known Geogr. Distrib. Erioc. 26. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 134 & 207. 1949; Moldenke, Résumé 173 & 484. 1959; Prain, Ind. Kew. Suppl. 5, pr. 2, 97. 1960.

ERIOCAULON YUNNANENSE Moldenke

Bibliography: Moldenke, Phytologia 2: 221, 376, & 379. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 132 & 207. 1949; Moldenke, Phytologia 3: 470--471. 1951; E. J. Salisb., Ind. Kew. Suppl. 11: 88. 1953; Moldenke, Résumé 170 & 484. 1959; E. H. Walker, Bibl. East. Asiat. Bot. Suppl. 1: 235. 1960.

ERIOCAULON ZAMBESIENSE Ruhl.

Synonymy: *Eriocaulon zambesiana* Ruhl. ex Moldenke, Résumé Suppl. 3: 32, in syn. 1962.

Bibliography: Ruhl. in Engl., Bot. Jahrb. 27: 70 & 75--76. 1899; Ruhl. in Engl., Pflanzenreich 13 (4-30): 61, 73, & 288. 1903; H. Lecomte, Bull. Soc. Bot. France 55: 571, & 572 (1908) and 55: 648. 1909; Moldenke, Known Geogr. Distrib. Erioc. 21, 22, & 42. 1946; J. Hutchinson, Botanist South. Afr. 499. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 113, 119, 120, & 207. 1949; Moldenke, Résumé 138, 149, & 484. 1959; Moldenke, Résumé Suppl. 3: 16 & 32. 1962; Moldenke, Phytologia 18: 259. 1969.

Hutchinson (1946) cites his no. *3648*. The *Herb. Inst. Fr. Afr. Noire 10358*, distributed as *E. zambesiense*, is actually the type collection of *E. latifolium* f. *proliferum* Moldenke, while *Bojer 79* is *E. sollyanum* Royle.

Citations: TANZANIA: Tanganyika: *Stolz 2326* (S). MALAWI: *Whyte s.n.* [Mt. Zomba] (B--cotype, Z--cotype).

ERIOCAULON ZOLLINGERIANUM Körn.

Synonymy: *Eriocaulon alatum* H. Lecomte, Journ. de Bot. 21: 104. 1908.

Bibliography: Körn., Linnaea 27: 583, 586, & 682--683. 1856; C. Müll. in Walp., Ann. 5: 926 & 945 (1860) and 6: 1171. 1861; Körn. in Mart., Fl. Bras. 3 (1): 289. 1863; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 880. 1893; Ruhl. in Engl., Pflanzenreich 13 (4-30): 66, 99, & 288. 1903; H. Lecomte, Journ. de Bot. 21: 104, 105, & 132, fig. 1 & 2. 1908; E. D. Merr., Philip. Journ. Sci. 7: 232. 1912; E. D. Merr., Fl. Manila 136. 1912; H. Lecomte, Fl. Gén. Indo-chin. 7: 18, fig. 2. 1912; E. D. Merr., Enum. Philip. Flow. Pl. 1: 192. 1912; Prain, Ind. Kew. Suppl. 4, pr. 1, 82. 1913; Fyson, Journ. Indian Bot. 2: 320. 1921; Prain, Ind. Kew. Suppl. 4, pr. 2, 82. 1938; Moldenke, Known Geogr. Distrib. Erioc. 26, 27, 42, & 61. 1946; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 880. 1946; Moldenke, Phytologia 2: 377.

1947; Moldenke, Alph. List Cit. 2: 462 (1948) and 3: 840. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 144 & 207. 1949; Moldenke, Phytologia 3: 181 (1949) and 4: 339. 1953; Van Royen, Nov. Guin., new ser., 10: 22, 36, 38, & 43—44, fig. 4 T. 1959; Moldenke, Résumé 175, 184, 190, 201, 479, & 484. 1959; Moldenke, Résumé Suppl. 1: 13. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 880. 1960; Moldenke, Résumé Suppl. 3: 20, 23, & 24. 1962; Van Royen, Nov. Guin. Bot. 14: 467. 1965; Thanikaimoni, Pollen & Spores 7: 183. 1965; Backer & Bakh., Fl. Java 3: 25—26. 1968; Moldenke, Phytologia 17: 385 (1968), 19: 13—14, 43, 65, 86, & 91 (1969), and 19: 329. 1970.

Illustrations: H. Lecomte, Journ. de Bot. 21: 105 & 132, fig. 1 & 2. 1908; H. Lecomte, Fl. Gén. Indo-chin. 7: 18, fig. 2. 1912; Van Royen, Nov. Guin., new ser., 10: 36, fig. 4 T. 1959.

Backer & Bakhuizen van den Brink (1968) give a partial description of this species: "Interfloral bracts acuminate or cuspidate, cuneate-obovate; receptacle more or less pubescent; basal bract of peduncles firmly appressed, with an obtuse, entire mouth; heads ovoid-globose, 4—5.5 mm. by 2.5—4 mm; involucral bracts ovate, obtuse; ♂: sepals 3; connate into a unilaterally split sheath, entirely pale; petals 3, unequal, ciliate, below the top with a gland; ♀: sepals 3, two of them navicular with a keeled-winged back, the 3rd rudimentary, linear, caducous; petals 3, rather obtuse, glandless. Leaves linear, obtusely acuminate, 6—8 cm by 2—3 1/4 mm. 0.12—0.30. Long ago collected near Tijikoya (W) on the mud of a wood-brook, afterwards never found again."

Lecomte (1908) says of it "Se rapproche de *E. sexangulare* L., mais n'a que deux sepales au lieu de trois à la fleur femelle" and cites *Thorel s.n.* from Bassac, in Indochina, as the type of *E. alatum*. He also notes "Nous l'avons aussi recontrée dans l'herbier de Pierre, comme venant de la Cochinchine du Sud".

Van Royen (1959) was the first botanist to unite *E. alatum* with the older *E. zollingerianum* and his composite description is therefore of particular importance: "Herb up to 30 cm. Leaves linear-ensiform, 2—8 by 0.2—0.4 cm, acuminate, 7—11-nerved, fenestrate, glabrous. Peduncles up to 30 cm long, 5-ribbed, twisted, glabrous, sheath 2.5—5 cm long, glabrous. Heads ovoid-oblong or ovoid-globose, 2.5—6 by 4—5.5 mm, involucral bracts obovate or oblong, c. 1.5 by 1 mm, rounded, glabrous, the inner bracts subacute, floral bracts broadly ovate or obovate-cuneate, c. 1.6 by 1.5 mm, indistinctly acuminate-cuspidate, glabrous; receptaculum with long white hairs. ♂ Flowers: sepals 3, tubuliformly united, but the two lateral ones united only up to a half, c. 1.7 mm long, rounded, irregularly serrate, glabrous or with a few hairs on the crest of the lateral sepals; petals 3, tubuliformly united, c. 1.2 mm long, the free lobes unequal, obtuse, fimbriate or entire at apex; stamens 6, unequal, anthers black. ♀ Flowers: sepals 3, lateral ones boatshaped, c. 1.2 by 1 mm, acute, broadly crested, crest at apex irregularly serrate, the abaxial wing broader than the adaxial wing, with long white hairs at inside, median sepal linear, 0.7 mm long, obtuse, glabrous, often soon caducous; petals 3, free, oblanceolate, c. 1.2 by 0.2 mm, acute, slightly fimbriate near apex; ovary 3-celled; style 1 with 3 branches. Seeds ellipsoid, c. 0.2 mm long, pale yellow, hairy. Distribution. Indo China, Java, Luzon, Celebes, New Guinea." He cites Van Royen 3601 & 3970 in the Leiden herbarium, N.G.F. 6172 & Womersley 3658 at Lae, and Brass 7844 in the herbarium of Arnold Arboretum and at Leiden, all from New Guinea. He dates Körnicke's work as "1854", but 1856 was the actual date of its appearance.

Fyson (1921) says "E. alatum (in Herb. Calc. Coll. Col. Pirie Cochin China;) with glistening ovoid heads and female sepals as in E. cuspidatum Dalz. There are also in Herb. Calc. two other sheets one Coll. Loher. No. 1602 in Philippines is very similar to the E. alatum (above) but the wings of the female sepals are coarsely toothed. The other has a label 'ex herb. hort. Kew' and a number 1168, but no other identification mark. Two of the female sepals are crested, one not deeply boat-shaped and not crested."

Recent collectors have encountered this plant on high plateaus from 200 to 400 meters in altitude, flowering and fruiting in January, April, August to October, and December, and record the vernacular name "chuk nok yung". Brass describes the heads as brown and says the plant is common on wet grass plains in New Guinea; Schmid found it in "terrain sableux en bordure d'une rivière". I have personally found the glistening stramineous ovoid flowering heads of this species most characteristic and helpfully distinctive.

Material has been misidentified and distributed in herbaria as E. merrillii Ruhl. and E. truncatum Hamilt. On the other hand, the Loher 1602, cited below, is a mixture with something in the Cyperaceae and Loher 6987 is a mixture with E. cinereum R. Br.

Citations: THAILAND: Bunnal 571b [Roy. Forest Dept. 18264] (Bk); Larsen 8425 (Z); Sørensen, Larsen, & Hansen 784 (Cp), 8070 (S). INDOCHINA: Annam: Schmid 79a (N). Cochinchina: Pierre s.n. [Cochinchina] (N). WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon: Loher 1602, in part (Mu—379, W—389001); M. Ramos s.n. [Herb. Philip. Bur. Sci. 1831] (N, W—626710); Reillo s.n. [Herb. Philip. Bur. Sci. 19270] (N). Island undetermined: Loher 6987, in part (Mu—406, W—713809). INDONESIA: GREATER SUNDA ISLANDS: Celebes: Eyma 3383 (Ut—11518b), 3996 (Ut—11514b). Java: Zollinger 333 (B—type, Z—isotype). Sumatra: H. H. Bartlett 7456 (Mi, W—1552242). MELANESIA: NEW GUINEA: Papua: Brass 7821 (N), 7884 (N).

ERIOCAULON ZYOTANII Satake

Bibliography: Satake, Bot. Mag. Tokyo 51: 287—288 [Shib. Comm. Art. 17: 105—106], fig. 2. 1937; Honda, Nom. Pl. Jap. 463.

1939; Satake in Nakai & Honda, Nov. Fl. Jap. 6: 6, 12, 25, 78, & 87, fig. 1 H & 9. 1940; Satake, Bull. Tokyo Sci. Mus. 4: [Rev. Jap. Erioc.] 16—17, pl. 11, fig. 3. 1940; Hill & Salisb., Ind. Kew. Suppl. 10: 86. 1947; Moldenke, Phytologia 2: 493 & 495. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 134 & 207. 1949; Moldenke, Résumé 173 & 484. 1959; Moldenke, Résumé Suppl. 3: 18 & 19. 1962; Koyama in Kitamura, Murata, & Koyama, Col. Illustr. Herb. Pl. Japan 3: 178 & 430. 1964.

Illustrations: Satake, Bot. Mag. Tokyo 51: [Shib. Comm. Art. 17: 105] 287, fig. 2. 1937; Satake in Nakai & Honda, Nov. Fl. Jap. 6: 6 & 25, fig. 1 H & 9. 1940; Satake, Bull. Tokyo Sci. Mus. 4: [Rev. Jap. Erioc.] pl. 11, fig. 3. 1940.

Satake (1937) records the vernacular name "izunosima-hosikusa" for this plant. The species is based on *Y. Zyôtani s.n.*, collected on the island of Kôzusima, province of Izu, Honshu, Japan, in July, 1936, and deposited in the herbarium of Tokyo University. Thus far the species appears to be known only from the original collection and is presumed to be endemic at the type locality.

LACHNOCAULON Kunth

Synonymy: *Sacnocaulon* Cuthbert ex Moldenke, Phytologia 3: 471, in syn. 1951.

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This small genus of 11 species and varieties is entirely North American, if Cuba is regarded as an integral part of that continent. The type species is *Eriocaulon villosum* Michx. [=*Lachnocaulon anceps* (Walt.) Morong]. The generic name is derived from the Greek, λαχνος and καυλος, meaning "woolly stem", in allusion to the white-woolly peduncles of the type species in its typical form. Vernacular names for members of the genus are "bog-buttons" and "hairy-pipeworts".

Radford, Ahles, & Bell (1964) key the Carolinian species apart as follows:

1. Mature seeds smooth..........................*L. beyrichianum*.
1a. Mature seeds cancellate or striate.
  2. Heads 4 mm. or less broad; seeds 0.5 mm. long.....*L. minus*.
  2a. Heads 5 mm. or more broad; seeds 0.8 mm. long.....*L. anceps*.

Kral (1966) recognizes only 5 species from continental North America and separates them as follows:

1. Trichomes of the apices of the receptacular bractlets and perianth parts congested with a milk-white substance, this imparting a pale gray or whitish color to the heads; plants very often long-lived, forming large convex mats of hairy-leaved rosettes, each rosette terminating an elongate-ascending, scaly stem; scapes hairy.
  2. Leaves narrowly linear; mature heads seldom broader than 4 mm.; seeds dark reddish-brown, very lustrous, the longitudinal ribs obscure.......................*L. beyrichianum*.
  2a. Leaves linear; mature heads seldom as narrow as 4 mm. and usually paler than the above; seeds not as lustrous, the longitudinal ribs evident.......................*L. anceps*.
1a. Trichomes of the apices of the receptacular bractlets and perianth parts not congested with a milk-white substance, thus translucent so that the brown bractlets and/or perianth parts impart their own color to the heads; the plants either relatively short-lived and short-stemmed or, if long-stemmed, with diminutive *Polytrichum*-like leaves.
  3. Scapes with ascending hairs; heads a dull gray-brown, the hairs of the receptacle and of the flowers so copious as to at least partly obscure the florets (old heads may lose some of the hairs)..............................*L. minus*.
  3a. Scapes smooth; heads either chocolate-brown or dull-brown, but, if dull-brown, with female sepals yellowish-white and

hardly obscured by the receptacular hairs and with the gynoecium 2-carpellary.

4. Heads dark chocolate-brown or reddish-brown, usually oblong by seeding time; gynoecium 3-carpellary; leaves seldom shorter than 2 cm.; the sheaths of the scapes shorter than to about the length of the leaves.......... L. engleri.

4a. Heads pale-brown, usually globose by seeding time; gynoecium 2-carpellary; leaves seldom as long as 2 cm.; the sheaths of the scapes longer than the leaves or at least rising above them.....................L. digynum.

His discussion of the genus as a whole is extremely interesting and well worth repeating here for the benefit of workers without access to the journal in which it was published: "Dr. Moldenke (1937) treats 8 species for the United States. However, species such as L. floridanum Small, L. glabrum Korn., and L. eciliatum Small are based on such intrapopulation variables as sepal length (accrescense is here suspected), peduncular trichomes, and amount of pubescence on bracts and sepals. Therefore, in this work, such entities are treated as extremes of either L. anceps or L. minus which appear to be the two nuclei for all these variants.

"In the United States Lachnocaulon may be distinguished readily from either Eriocaulon or Syngonanthus by its fine, evidently branched root system in contrast to the relatively unbranched-septate systems of Eriocaulon and the unbranched and fleshy systems of Syngonanthus. Lachnocaulons of the United States may be divided into two groups on the basis of habitat. One, comprised of L. engleri and L. minus, is usually found in such ephemeral habitats as fluctuating lake and pondshores, roadbank seepage, borrow pits, ditches, spoilage, and geologically recent sandy sloughs, particularly along the seacoast. Thus such species tend to be aspect dominant one summer in a given locale, seemingly absent the next. It would appear in such case that their seeds must have to remain viable over extended periods of time, for some of the ephemeral Florida lakes about which they often abound are periodically bone dry. The other group, comprised of L. anceps, L. beyrichianum, and L. digynum, appears in more stable situations inland within the coastal plain province as well as along the coast and on disturbed situations. They usually are on what appears to be much more acid substrata such as those provided by hillside bogs in the longleaf pine hills, peaty savannas, pine-palmetto flatwoods, and sphagnous bogs. Both L. beyrichianum and L. anceps have a wider range of tolerance to soil moisture in that they may be found on quite dry sandy sites, sometimes even in association with turkey oak (Quercus laevis)."

The A. Chase 10365, distributed as Lachnocaulon sp., is actually Paepalanthus incanus (Bong.) Körn., while Hood 4267, at least insofar as the University of Illinois specimen is concerned, is

Gyrotheca tinctoria (Walt.) Salisb.

LACHNOCAULON ANCEPS (Walt.) Morong Figure 6

Additional & emended synonymy: *Eriocaulon anceps* Walt., Fl. Carol. 83. 1788. *Eriocaulon villosum* Michx., Fl. Bor.-Am. 2: 166. 1803 [not *E. villosum* Salzm., 1855, nor Willd., 1856]. *Eriocaulon pubigerum* Bong., Mém. Acad. Imp. Sci. St. Pétersb., sér. 6, 1: 628, pl. 42. 1831. *Lachnocaulon michauxii* Kunth, Enum. Pl. 3: 497. 1841. *Lachnocaulon michauxi* Kunth apud Benth. & Hook. f., Gen. Pl. 3 (2): 1024. 1883. *Lachnocaulon anceps* Morong apud Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 55. 1930. *Lachnanthes michauxii* Kunth ex Moldenke, Phytologia 3: 471, in syn. 1951. *Sacnocaulon auceps* Cuthbert ex Moldenke, Phytologia 3: 471, in syn. 1951. *Lachnocaulon villosum* Kunth ex Moldenke, Résumé Suppl. 1: 18, in syn. 1959. *Eriocaulon anceps* (Walt.) Morong ex Moldenke, Résumé Suppl. 4: 11, in syn. 1962. *Lachnocaulon anceps* (Wahl.) Morong ex Moldenke, Résumé Suppl. 4: 11, in syn. 1962 [not *L. anceps* Benth. & Hook. f., 1903]. *Lachnocaulon anceps* (Walt.) Ell. ex Moldenke, Résumé Suppl. 4: 11, in syn. 1962. *Eriocaulon villosum* El. ex Moldenke, Résumé Suppl. 17: 11, in syn. 1968. *Lachnocaulon anceps* Walt., in herb. *Lachnocaulon anceps* (Walt.) Moray, in herb.

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It should be noted here that L. anceps Benth. & Hook. f. is a synonym of L. digynum Körn., Eriocaulon villosum Salzm. (mentioned also in the synonymy above) is a synonym of Paepalanthus bifidus (Schrad.) Kunth, and E. villosum Willd. belongs in the synonymy of Eriocaulon decangulare L. Steudel (1821, 1840) reduces E. anceps Walt. to synonymy both under E. compressum Lam. [as "E. gnaphalioides Michx."] and what he calls "E. villosum Michx."

Recent collectors describe this plant as having the flowering heads white or bluish-white, the leaves short, and the peduncles 3 times as long as the leaves, to 1.5 dm. tall. They have found it growing in bogs, open bogs, and shrub bogs, swamps, savannas, grassy open acid savannas, Sphagnum bogs, creek bottoms, peat-sedge bogs, and in argillaceous and siliceous boggy depressions, on seepage slopes in pinelands, wet sandy or gravelly slopes, and sandy-peaty ditch banks, along railroad tracks, and among young pines. It has been found growing in sandy peat of flatwood bogs, in hardwood forests, roadside clearings and ditches, sandy bottoms, moist ground of savannas, and in low ground and moist sandy soil in general, in sandy openings in Pinus taeda woods, in black mucky soil of low marshy open areas, and in fine sandy soil of open pastures with grass, small scattered pines, etc. Lakela found it on low seasonally wet and weedy roadsides with *Typha*, *Thalia*, *Hibiscus*, *Teucrium*, *Polygala*, grasses, and sedges, bordered by open grazed pinelands. Fernald & Long describe it as forming a continuous turf in *Sphagnum* bogs.

Cory reports that the species forms mats in wet sandy places in open woods; Correll & Johnston say that it forms large clumps on seepage slopes in savanna areas; Kral found it forming frequent clumps on moist sand of roadside ditches; while Bell encountered it along wet roadsides and in burned-over shrub savannas. Other collectors have found it in moist sand of roadside ditches, in low flat areas, on dry sandy pond margins, in moist grassy areas, roadside clearings, low longleaf pine woods, and low marshy areas in coniferous woods, in ditches, low wet or sandy ditches, and wet drainage ditches, in peaty excavated areas on savannas, in savanna-like grassy areas, by pineland pools, in seepage bogs and springheads, pineland savannas, moist cutover pinelands, low or wet open pinewoods, moist or moist peaty pinelands, and in pocosins. It grows in low *Sphagnum* bogs, pine flatwoods, the low borders of sandhills, and low ditches in pine barrens, in the coastal flatwoods, especially in the moist sand of such flatwoods, and in the turkey oak community, at altitude up to 1100 feet, flowering and fruiting from March to September. *Iltis 1253*, from Caroline County, Virginia, bears a notation "northernmost station for the species". *Buell 1934* is obviously very immature, while *Chapman C.430* is labeled "*Lachnocaulon* n. sp.?" Recorded vernacular names for the plant are "hat-pin" and "hairy pipewort".

Radford, Ahles, & Bell (1964) state that in the Carolinas it blooms from May to October and is found in "Bogs, savannas, ditches, low pinelands; chiefly cp. [Coastal Plain]." Harper (1906) records it from Berrien, Coffee, Colquitt, Decatur, Emanuel, Irwin, Montgomery, and Tattnall Counties, Georgia. The initial letter of the specific epithet of Michaux's binomial is sometimes uppercased for no valid reason.

The white pistillate florets of this plant mingled with the brown staminate ones impart a mixed gray and dark appearance to the flower heads. The overall distribution of the species is on the Coastal Plain from southeastern Pennsylvania (?) and Virginia to Florida, west along the Gulf Coast to eastern Texas, and south to the Isle of Pines. Thorne (1954) reports it as "frequent" in "Wet sand of moist pinelands, seepage slopes, and bogs". McDaniel describes it as "common" in *Sphagnum*-*Hypericum* bogs surrounded by longleaf pines in Forrest County, Mississippi, but only "local" in longleaf pine woods in Stone and "locally common" near pinewoods in Harrison County of the same state.

Kral (1966) reduces *L. glabrum* Körn. and *L. floridanum* Small to synonymy under *L. anceps*, but in this disposition I do not follow him. He describes the habitat of the species as "Moist to fairly dry sands, sandy peats or peat of pine flatwoods, savannas, upper edge of pinelands, pond margins, ditchbanks, lakeshores, and bogs, Florida north to New Jersey, west to eastern Texas." Personally, in my forty years of work on the group, I have seen no material of this species from New Jersey, and Kral does not cite the New Jersey collection on which he bases his statement. Similarly, I am not at all certain that the Schweinitz specimen, cited below as from Pennsylvania, actually was collected in that state. If it was, the locality is probably destroyed now. The type of the species was gathered by Thomas Walter in "Carolina" [probably South Carolina].

Kral (1966) discusses this species as follows: "There are difficulties in distinguishing smaller-headed versions of *L. anceps* from *L. minus* or from *L. beyrichianum*. These, however, will have the clavate-whitened, hair on the bracts and sepals to distinguish them from the former, and a definitely ridged-and-striate seed to distinguish them from the latter. Also, none of the other Lachnocaulons have, in their older, 'seeding' heads, the property of well-exserted bracts and female sepals. This imparts a 'chaffy' look to late summer inflorescences.

"J. K. Small (1903) described *L. floridanum* as a species distinct from *L. anceps* on the basis of its glabrous scapes and smaller, grayer, heads. Examination of specimens so identified as well as the type ('Fla. Lake Co.: lake, Eustis, *Nash 1981*') together with a field study of populations of south Florida *Lachnocaulon* have served to convince me that such differences are not consistent, in that they may vary broadly within a single population. Such is the case in populations of these in Manatee, Martin, Sarasota, St. Lucie, De Soto and Charlotte counties in peninsular Florida. The type specimen is itself an immature example, hence the anther measurements which are used as one basis for distinguishing the species are of young, accrescent, structure. The glabrous peduncles which are supposed to distinguish *L. glabrum* from *L. anceps* are not consistently glabrous in the above mentioned counties of Florida."

Material of *L. anceps* has been misidentified and distributed in herbaria under the names *Duptaya flavidula* (Michx.) Kuntze, *Eriocaulon compressum* Lam., *E. decangulare* L., *E. gnaphaloides* Michx., *E. körnickianum* Van Heurck & Muell.-Arg., *E. ravenelii* Chapm., *E. revenelii* Chapm., *E. septangulare* With., *E. texense* Körn., *Lachnocaulon digynum* Holm, *L. glabrum* Körn., *L. minus* (Chapm.) Small, and *Syngonanthus flavidulus* (Michx.) Ruhl.

On the other hand, the *S. M. Tracy 7586*, distributed as *L. anceps*, is actually the type collection of *L. anceps* f. *glabrescens* Moldenke, *Beyrich s.n.* [Ebenezer, 8/7/1833], *Fox & Boyce 3780*, *M. C. Reynolds s.n.* [Mar.—June 1875], and *B. W. Wells s.n.* [Burgaw, 6/7/1945] are *L. beyrichianum* Sporleder, *Curtiss 6201* and *F. H. Sargent s.n.* [June 19, 1950] are *L. minus* (Chapm.) Small, *C. Owens 154* and *A. Ruth s.n.* [De Soto Falls, July 1898] are Eriocaulon lineare Small, Tharp 44343 is E. texense Körn., and S. B. Jones s.n. [8 May 1960] is Syngonanthus flavidulus (Michx.) Ruhl. Schallert 16912 is a mixture of Lachnocaulon anceps and Syngonanthus flavidulus.

Additional citations: PENNSYLVANIA: County undetermined: Schweinitz s.n. [e Pensylvania] (Mu--321). VIRGINIA: Caroline Co.: Iltis 1253 (Ws). Greensville Co.: J. T. Baldwin Jr. 14808 (N); Fernald & Long 8630 (Ok, S); Mikula 3425 (N), 8687 (N); Smith & Hodgdon s.n. [Plant. Exsicc. Gray. 1028] (Ca--717803, Hi--21934, Hi--54013, Ms--83593, Ok, S, Se--201223, Ut--69802b, Ws). King & Queen Co.: Mikula 5748 (N). Nansemond Co.. Fernald, Long, & Clement 15239 (N). Prince George Co.: Fernald, Long, & Smart 5698 (S). Southampton Co.: Mikula 8009 (N). Sussex Co.: Fernald & Long 8181 (Mi). NORTH CAROLINA: Beaufort Co.: Fox, Whitford, & Price 260 (No--14249); Wood & Clement 6939 (St), 6969 (Hi--51164). Bladen Co.: Ahles 456/48 (Ur); Ahles & Haesloop 29106 (Hi--135330); Davis & Davis 10498 (We); A. R. Moldenke 462 (Fg); Oosting 3555 (Hi). Brunswick Co.: C. R. Bell 13282 (Hi--135340); R. K. Godfrey 48391 (No--17465). Chowan Co.: Ahles & Duke 47911 (Hi--135337). Columbus Co.: C. R. Bell 12712 (Hi--135339); A. E. Radford 4095 (Hi--47813). Craven Co.: A. E. Radford 37642 (Hi--135343). Cumberland Co.: C. R. Bell 219 (Hi--33704); Fox & Godfrey 2616 (N); Radford & Stewart s.n. [Oct. 8, 1939] (Hi--13477); Ripley & Barneby 7326 (N). Duplin Co.: A. C. Mathews s.n. [June 6, 1932] (Hi). Greene Co.: A. E. Radford 36643 (Hi--135328). Harnett Co.: Fox & Godfrey 2557 (N); H. Laing 1454 (Hi--118261); A. E. Radford 42769 (Hi--136140). Hoke Co.: Ahles & Neuber 25046 (Hi--118263). Iredell Co.: M. E. Hyams s.n. [Statesville] (Dt, Dt). Johnston Co.: Houten & Schoenmakers 978 (Ut--52777a); A. E. Radford 27884 (Hi--118264). Jones Co.: A. E. Radford 36927 (Hi--135335, Hi--135336). Lee Co.: S. Stewart 835 (Hi--135338). Lenoir Co.: A. E. Radford 25628 (Hi--118265); Randolph & Randolph 785 (Vi). Martin Co.: J. A. Drushel 10812 (Ur), s.n. [5/29/35] (No--20636); A. E. Radford 38323 (Hi--135331). Montgomery Co.: A. E. Radford 19499 (Hi--135323). Moore Co.: Blankinship s.n. [Southern Pines, July 18, 1895] (Lb--20644). New Hanover Co.: B. W. Wells s.n. [June 2, 1924] (No--2638). Onslow Co.: Ahles & Haesloop 28131 (Hi--135327). Pamlico Co.: R. K. Godfrey 48295 (No--17467); A. E. Radford 35806 (Hi--135333). Pender Co.: Ahles & Haesloop 27941 (Hi--135326); A. E. Radford 5149 (Hi--50209). Pitt Co.: M. C. Helms 1011 (Hi--170130). Richmond Co.: A. E. Radford 14423 (Hi--118266). Robeson Co.: Blomquist & Wilbur 15183 (N); Britt 2297 (Hi--167120); Terrell 3066 (Hi--118267). Sampson Co.: Ahles & Haesloop 30030 (Hi--135329). Scotland Co.:

Ahles & Hammond 24910 (Hi--118269); Radford & Stewart 455 (Hi--21284). Wake Co.: Buell 1934 (No--2646); R. K. Godfrey 3989 (No-2640); Morris s.n. [Raleigh] (Ca--379008). Washington Co.: A. E. Radford 38849 (Hi--137367); Wood & Clement 6939 (Hi--51188). Wayne Co.: Duke 2637 (Hi--134742); A. E. Radford 25471 (Hi--127339). Wilson Co.: A. E. Radford 35596 (Hi--135332), 38101 (Hi--135334), 44406 (Ms--47415). County undetermined: Collector undetermined s.n. (S); G. McCarthy s.n. [Julio 1885] (Hi). SOUTH CAROLINA: Aiken Co.: Eggert s.n. [25 May 1899] (Ut--799b). Allendale Co.: Ahles & Bell 12573 (Hi--137393). Bamberg Co.: Ahles & Haesloop 26059 (Hi--118253). Barnwell Co.: Batson & Kelley 35 (Hi--140172, Hi--140173), s.n. [June 13, 1952] (Hi--140171), s.n. [June 27, 1952] (Hi--140174), s.n. [July 1, 1957] (Hi--140175). Berkeley Co.: Ahles & Haesloop 26428 (Hi--118254, Se--199100); Ravenel s.n. [Santee Canal, July] (Ms--15492). Charleston Co.: Ahles & Haesloop 25665 (Hi--118256); Cabanis s.n. [near Charleston] (B). Chesterfield Co.: A. E. Radford 12435 (Hi--118255). Clarendon Co.: A. E. Radford 24510 (Hi--135342). Colleton Co.: C. R. Bell 2284 (Hi--133982). Darlington Co.: W. C. Coker s.n. [July 5, 1909] (Hi); J. B. Norton s.n. [July 8, 1920] (Hi), s.n. [Apr. 26, 1921] (Hi); Radford & Stewart 401 (Hi--15971, N); B. E. Smith s.n. [5/25/32] (Hi--77050). Dillon Co.: Ahles & Haesloop 27843 (Hi--135325). Dorchester Co.: Ahles & Haesloop 26318 (Hi--118257). Edgefield Co.: A. E. Radford 26527 (Hi--118258). Florence Co.: C. R. Bell 7568 (Hi--118259); Ravenel s.n. [Florence, July 1879] (Br). Georgetown Co.: Godfrey & Tryon 51 (Ca--957182); A. E. Radford 24968 (Hi--118260). Hampton Co.: C. R. Bell 2531 (Hi--133980). Horry Co.: C. R. Bell 7784 (Hi--118262); Houten & Schoenmakers 1042 (Ut--52776a). Kershaw Co.: H. D. House 2644 (E). Lexington Co.: A. E. Radford 23344 (Hi--133981). Marion Co.: C. R. Bell s.n. [July 2, 1958] (Hi--135341). Marlboro Co.: A. E. Radford 12544 (Hi--118268, N). Orangeburg Co.: Ahles & Haesloop 25434 (Hi--139435). Sumter Co.: A. E. Radford 23847 (Hi--135324). Williamsburg Co.: A. E. Radford 24720 (Hi--118270). County undetermined: Beyrich s.n. [Carolina] (B); Bosc s.n. [Carolina, 1807] (B); Herb. Durand s.n. (Ms--15494). GEORGIA: Calhoun Co.: R. F. Thorne 3589 (N), 4571 (Vi), 4684 (Ca--906388). Clay Co.: R. F. Thorne 3669 (We). Clinch Co.: R. Kral 24289 (N). Dodge Co.: Biltmore Herb. 2755d (S). Douglas Co.: Cronquist 5424 (Ca--777561, Mi, N). Glynn Co.: Harmer 881 (S). Grady Co.: A. R. Moldenke 303 (Fg). Jeff Davis Co.: A. R. Moldenke 351 (Fg). Lowndes Co.: A. R. Moldenke 317 (Fg, S). Miller Co.: R. F. Thorne 4196 (Mi), 4217 (Mi, We), 4426 (Ca--906389, N, Vi). Pierce Co.: R. Kral 24150 (N). Screven Co.: A.

R. Moldenke 414 (Fg). Sumter Co.: R. M. Harper 443 (Ms--15496). Ware Co.: A. R. Moldenke 341 (Fg). County undetermined: Ellis s. n. [Georgia] (Ws). FLORIDA: Bay Co.: R. F. Martin 1708 (N). Bradford Co.: Meebold 28103 (Mu). Clay Co.: W. M. Canby s.n. [Hibernia, March 1869] (Dt), s.n. [Hibernia, 1869] (Ca--216804). Dixie Co.: R. K. Godfrey 59650 (Hi--155059), Duval Co.: Curtiss 3021 (Ca--2423, Ms--15495, Mu--373, Vi), 4139 (Ca--59416), 4861 (Ca--115161); Lighthipe 173 [Herb. Umbach 10992] (Ws), s.n. [So. Jacksonville, Apr. 13, '97] (S). Franklin Co.: R. K. Godfrey 55718 (Hi--102375, Vi); Godfrey, Reese, & Redfearn 53425 (Hi--157561, N); A. R. Moldenke 293 (Fg). Gulf Co.: R. K. Godfrey 57102 (Ca--112499). Highlands Co.: Meebold 28104 (Mu). Hillsborough Co.: Lakela 25369 (N). Lake Co.: G. V. Nash 1942 (Mm--7954). Levy Co.: Godfrey & Lindsey 56981 (Ca--112547); Kral & Kral 6918 (N). Liberty Co.: Chapman C.430 (W--936872); A. R. Moldenke 280 (Fg), 285 (Fg). Manatee Co.: Perdue 1765 (Ca--49688, Rf, Ur, Ut--61198b). Marion Co.: Meebold 28098 (Mu); P. O. Schallert 5447 (Mu). Okeechobee Co.: R. Kral 20478 (N). Osceola Co.: R. Kral 20468 (N); Schallert 16912, in part (Ut--89890b); Singletary s.n. [Feb. 29, 1936] (No--2633). Pasco Co.: Armstrong & Armstrong s.n. [Crystal Spring, July 10, 1922] (E--911458); P. Wiegand 7784 (St). Saint Johns Co.: Godfrey & Lindsey 56960 (Ca--112476); M. C. Reynolds s.n. [Mar.--June 1875] (Ms--15493). Santa Rosa Co.: Kral & Redfearn 2934 (Hi--111314). Sumter Co.: R. Kral 6854 (Hi--132224, N). Volusia Co.: R. Kral 20443 (N), 20453 (N). County undetermined: Bory de St. Vincent s.n. [Fla. or Miss.] (V, V); Herb. Chapman s.n. [Florida] (Ok). ALABAMA: Baldwin Co.: S. B. Jones s.n. [7 May 1960] (Hi--210888); W. Wolf s.n. [Elberta, July 5, 1926] (Ca--841813). Duval Co.: Curtiss 3021 (Mm--7952), 4861 (Mm--7953). Escambia Co.: X. M. Gaines 165 (N). Mobile Co.: G. L. Fisher s.n. [Mobile, May 12, 1928] (Ew). Montgomery Co.: Olds s.n. [Montgomery, 3.20.94] (Ws). County undetermined: Buckley s.n. [Alabama, July 1840] (Br, Br), s.n. (E). MISSISSIPPI: Forrest Co.: S. McDaniel 3162 (N), 3237 (N). George Co.: Ahles & Bell 7720 (Ur); Demaree 33388 (Z). Hancock Co.: Demaree 35223 (Ss). Harrison Co.: S. McDaniel 3122 (N); Woodson & Anderson 1515 (E--934599). Jackson Co.: Demaree 28670 (N), 30716 (N), 32035 (Le), 35061 (Ss); Diener 180 (Ur); H. J. Jacob 1294 (Hi--196296); S. M. Tracy 5031 (Hi--24867). Lamar Co.: Jones & Reynolds 12324 (N). Pearl River Co.: Jones & Reynolds 11957 (N), 11960 (N); R. Kral 17332 (N); S. McDaniel 3220 (N). Stone Co.: S. McDaniel 3111 (N). LOUISIANA: Beauregard Par.: Ewan 21065 (Ac); R. Kral 20156 (N), 20197 (N); Kral & Ricks 16991 (N). Rapides Par.: R. Kral 20069 (N). Vernon Par.: Gregory

& Eiten 23 (N); R. Kral 20039 (N); R. McVaugh 8457 (Mi). TEXAS: Angelina Co.: Correll & Edwin 16499 (Rf); Correll & Wasshausen 27518 (Ld). Hardin Co.: Cory 52778 (N, Rf, Se—127154), 57125 (Gg); R. L. Crockett 560 (Ld); Lundell & Lundell 11152 (Ld); Tharp & Tyson s.n. [June 27, 1952] (St). Jasper Co.: D. S. Correll 27411 (Ld); Correll & Correll 12522 (Rf); Correll & Johnston 19643 (Rf); Correll, Ogden, & Svenson 28113 (Ld); F. W. Gould 5838 (Ca—978706). Newton Co.: Correll, Johnston, & Edwin 22288 (Ld); Tharp 44346 (S). Tyler Co.: D. S. Correll 37248 (Mi); Tharp, Turner, & Johnston 54955 (Ld, St). ISLA DE PINOS: Ekman 12410 (S). LOCALITY OF COLLECTION UNDETERMINED: Hooker s.n. [s. States] (B). MOUNTED ILLUSTRATIONS: drawings & notes by Körnicke (B).

LACHNOCAULON ANCEPS f. GLABRESCENS Moldenke

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Kral says of his collection, cited below: "a mixed population of smooth and hairy scape", found in moist sandy peat of slash pine and saw palmetto flatwoods ditchbank, with the flowering heads "gray-white". Material of this form has been misidentified and distributed in herbaria under the name L. digynum Holm.

Citations: FLORIDA: Manatee Co.: S. M. Tracy 7586 (B—isotype, Ca—181776—isotype, Mi—isotype, N—type, S—isotype, Ws—isotype). Martin Co.: R. Kral 20420 (N).

LACHNOCAULON BEYRICHIANUM Sporleder

Bibliography: Körn., Linnaea 27: 567—568. 1856; C. Müll. in Walp., Ann. 5: 920 (1860) and 6: 1203. 1861; Körn. in Mart., Fl. Bras. 3 (1): 295. 1863; Benth. & Hook. f., Gen. Pl. 3 (2): 1024. 1883; Morong, Bull. Torr. Bot. Club 18: 361 & 362. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 2: 19. 1894; Ruhl. in Engl., Pflanzenreich 13 (4-30): 240 & 288. 1903; J. K. Small, Fl. Southeast. U. S., ed. 1, 234 & 235 (1903) and ed. 2, 234, & 235. 1913; J. K. Small, Man. Southeast. Fl. 256. 1933; Moldenke, N. Am. Fl. 19 (1): 46 & 49. 1937; Moldenke, Phytologia 1: 329, 349, 356, & 360. 1939; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 2: 19. 1946; Moldenke, Alph. List Cit. 1: 257. 1946; Moldenke, Known Geogr. Distrib. Erioc. 2, 3, & 42. 1946; Moldenke, Alph. List Cit. 3: 850. 1949: Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 8, 9, & 207. 1949; Moldenke, Phytologia 3: 493. 1951; Moldenke, Résumé 10—12 & 484. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 2: 19. 1960; Moldenke, Résumé Suppl. 4: 2. 1962; Radford, Ahles, & Bell, Guide Vasc. Fl. Carol. 106 & 107. 1964; R. Kral, Sida 2: 317—319 & 331. 1966; Shinners, Sida 2: 443. 1966; Moldenke, Résumé Suppl. 16: [1]. 1968.

Illustrations: R. Kral, Sida 2: 318. 1966.

Recent collectors have found this plant growing on sand hills, in sand on back dunes, at the open edges of bogs, in turkey oak communities, in dry sandy pinelands, and in moist coarse sand, flowering and fruiting in June and July. Kral says of his Saint Lucie County (Florida) collection: "frequent on rather dry sands of slash pine - saw palmetto flatwoods with *L. anceps* and *L. minus* nearby", and of his Volusia County collection: "in large tufts, nearby are *L. minus* and *L. anceps* but these are more abundant on disturbed sands". In his 1966 work he says of *L. beyrichianum*: "Sands, sandy peats and peat of pine flatwoods, moist pineland savannas, pineland pond margins, lakeshores and rather dry oak-pine barrens, central Florida north to southern North Carolina (Bladen Co.)......The affinities of this species to *L. anceps* are at once evidenced by its habit, habitat, leaf and scape indument and, especially by its white-clavate perianth trichomes. Yet the leaves of *L. beyrichianum* are consistently narrower, and its seeds comparatively smooth and lustrous. Such differences, though seemingly minor, appear to hold even in mixed populations of the two."

Radford, Ahles & Bell (1964) state that in the Carolinas the species flowers from May to September and is found in "Sandy shores of pools, very rare". They record it from Alabama, but cite no collection to back up this claim. In forty years I have seen no material of it from Alabama. They distinguish it from the other Carolina species by its mature seeds being smooth, not cancellate or striate.

The type of the species was collected by Heinrich Carl Beyrich at the edges of a swamp near Ebenezer, Effingham County, Georgia, on July 8, 1833. The isotype specimen in the Berlin herbarium was annotated as *L. anceps* by Ruhland in 1900. Jackson (1894) reduces *L. beyrichianum* to synonymy under what he called *L. michauxii* Kunth, which is what we now know as *L. anceps* (Walt.) Morong.

Material of *L. beyrichianum* has been misidentified and distributed in herbaria under the names *L. anceps* (Walt.) Morong, *L. glabrum* Körn., *L. michauxii* Kunth, and *L. minus* (Chapm.) Small. On the other hand, the *R. Kral 20418*, distributed as *L. beyrichianum*, is actually *L. glabrum* Körn., while *G. V. Nash 148*, *1295*, & *1855* are *L. minus* (Chapm.) Small.

Additional citations: NORTH CAROLINA: Bladen Co.: *Buell & West 1742* (No—2643); *Fox & Boyce 3780* (N, No—29707); *R. K. Godfrey s. n.* [White Lake, 6-20-1937] (No—2639). New Hanover Co.: *R. K. Godfrey 4680* (No—2647). Pender Co.: *A. C. Martin s.n.* [Burgaw, 5/17/1925] (No—2642); *B. W. Wells s.n.* [Rowes Bridge, Burgaw, 7/13/1927] (No—2641), *s.n.* [Rowes Bridge, Burgaw, 6/9/1929] (No—2637), *s.n.* [Burgaw, 6/7/1945] (No—2636). SOUTH CAROLINA: Horry Co.: *W. C. Coker s.n.* [Myrtle Beach, June 23, 1931] (Hi—24072). GEORGIA: Effingham Co.: *Beyrich s.n.* [Ebenezer, 8/7/1833] (B—isotype). FLORIDA: Saint Johns Co.: *M. C. Reynolds s.n.* [Mar.—

June 1875] (Ca--2424). Saint Lucie Co.: R. Kral 20378 (N). Volusia Co.: R. Kral 20441 (N); Tomlinson 10-6-63 D (Ft—272).
MOUNTED ILLUSTRATIONS: drawings & notes by Körnicke (B).

LACHNOCAULON CUBENSE Ruhl.

Bibliography: Ruhl. in Fedde, Repert. Spec. Nov. 22: 34. 1925; A. W. Hill, Ind. Kew. Suppl. 7: 133. 1929; Moldenke, N. Am. Fl. 19 (1): 46 & 48. 1937; Moldenke, Phytologia 1: 329, 351, & 355. 1939; Moldenke, Known Geogr. Distrib. Erioc. 5 & 42. 1946; León, Fl. Cub. 1: 284 & 426. 1946; Moldenke, Alph. List Cit. 1: 187. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 44 & 207. 1949; Moldenke, Résumé 52 & 484. 1959.

Additional citations: CUBA: Las Villas: Ekman 17118 (S—type).

LACHNOCAULON DIGYNUM Körn.

Additional & emended synonymy: Lachnocaulon anceps Benth. & Hook. f. apud Ruhl. in Engl., Pflanzenreich 13 (4-30): 242 & 288, in syn. 1903 [not L. anceps (Wahl.) Morong, 1962, nor (Walt.) Ell., 1962, nor (Walt.) Moray, 1970, nor (Walt.) Morong, 1891]. Eriocaulon digynum Körn. ex Moldenke, Alph. List Cit. 3: 806, sphalm. 1949. Lachnocaulon digynum Holm ex Moldenke, Résumé Suppl. 1: 18, in syn. 1959.

Bibliography: Körn., Linnaea 27: 570—571. 1856; C. Müll. in Walp., Ann. 5: 921 (1860) and 6: 1203. 1861; Körn. in Mart., Fl. Bras. 3 (1): 286, 288, & 294. 1863; Van Heurck & Muell.-Arg. in Van Heurck, Obs. Bot. 1: 108. 1870; Benth. & Hook. f., Gen. Pl. 3 (2): 1024. 1883; Morong, Bull. Torr. Bot. Club 18: 362. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 2: 19. 1894; Ruhl. in Engl., Pflanzenreich 13 (4-30): 13, 16, 240, 242, & 288. 1903; J. K. Small, Fl. Southeast. U. S., ed. 1, 234 & 235 (1903) and ed. 2, 234 & 235. 1913; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 55. 1930; J. K. Small, Man. Southeast. Fl. 256. 1933; Moldenke, N. Am. Fl. 19 (1): 46 & 48—49. 1937; Moldenke, Phytologia 1: 329, 350, 358, & 360. 1939; Moldenke, Known Geogr. Distrib. Erioc. 3 & 42. 1946; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 2: 19. 1946; Moldenke, Phytologia 2: 491. 1948; Moldenke, Alph. List Cit. 2: 460 (1948) and 3: 806. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 9, 11, & 207. 1949; Moldenke, Phytologia 3: 493—494. 1951; Moldenke, Résumé 12, 14, 302, & 484. 1959; Moldenke, Résumé Suppl. 1: 18. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 2: 19. 1960; Moldenke, Résumé Suppl. 3: 3. 1962; R. Kral, Sida 2: 315--317 & 325—327. 1966; Shinners, Sida 2: 443. 1966; Moldenke, Résumé Suppl. 16: [1]. 1968.

Illustrations: R. Kral, Sida 2: 326. 1966.

The L. anceps (Walt.) Morong, referred to in the synonymy above, is, of course, a valid species of which the various variants in accredition there listed are synonyms. Morong (1891) says of L. digynum "I have not seen specimens of this. Körnicke attributes it to Alabama, from whence it was sent by Bentham....It is regarded by Benth. and Hook. l. c. as probably a depauperate form of L. anceps, with heads not yet well developed, but it appears to me to come much nearer to L. Beyrichianum. Fresh specimens are very desirable."

On the labels of his collections, cited below, Kral says that he found this plant growing "on exposed wet sands of seepage bogs", "on bulldozed sandy peaty pineland pond margin", and "on wet sandy peat of seepage by pine flatwoods pond". He describes the "heads dull gray-brown" and notes that the "plants have leaves startlingly short and Polytrichum-like". In his 1966 work he describes its habitat as "Wet acid exposed sands and sandy peats or seepage bogs, pineland pond margins, ditches and roadbanks, coastal plain, northwestern Florida west to southern Mississippi. Type. Alabama. This species, which is particularly abundant in the wet pine flatwoods country about Pensacola, Florida, has the smallest leaves of all the Lachnocaulon of the United States. The small rosettes, densely aggregated on slender ascending rhizomes into bright green, convex tufts of sometimes hundreds of individuals, remind one of some of the larger Polytrichums. The 2-carpellate condition of the gynoecium is consistent throughout all samples of this species so far examined, there being no evidence at all of any aborted third carpel either in the ovulary or in the style branching. The only other species of Lachnocaulon which I have found in association with this one is L. anceps, from which it is readily distinguished in the field by its glabrous or almost glabrous scapes, its shorter stature, and its darker, smaller heads." It has been collected in flower and fruit from July to September.

The S. M. Tracy 7586, distributed as L. digynum, is actually the type collection of L. anceps f. glabrescens Moldenke.

Additional citations: ALABAMA: Baldwin Co.: W. Wolf s.n. [Elberta, Aug. 21, 1925] (Ca--841814). FLORIDA: Bay Co.: R. Kral 15667 (N). Escambia Co.: R. Kral 17634 (N), 23169 (N). MOUNTED ILLUSTRATIONS: drawings & notes by Körnicke (B).

LACHNOCAULON ECILIATUM Small

Bibliography: J. K. Small, Fl. Southeast. U. S., ed. 1, 234, 235, & 1328. 1903; Prain, Ind. Kew. Suppl. 3: 99. 1908; J. K. Small, Fl. Southeast. U. S., ed. 2, 234 & 235. 1913; J. K. Small, Man. Southeast. Fl. 256--257. 1933; Moldenke, N. Am. Fl. 19 (1): 46 & 49. 1937; Moldenke, Phytologia 1: 330, 349, 352, 354, & 356. 1939; Moldenke, Known Geogr. Distrib. Erioc. 3 & 42. 1946; Moldenke, Alph. List Cit. 1: 42, 138, & 257. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 9 & 207. 1949; Moldenke, Phytologia 3: 494. 1951; Moldenke, Résumé 12 & 484. 1959; R. Kral, Sida 2: 315 & 321. 1966; Shinners, Sida 2: 443. 1966; Moldenke, Phytologia 18: 437. 1969.

Recent collectors have found this plant growing on the sandy shores of small lakes, flowering and fruiting in January and June. Material of it has been misidentified and distributed in herbaria as L. glabrum Körn. and Eriocaulon ravenelii Chapm. The

R. M. Harper 8, cited below, is a mixture with *L. engleri* Ruhl.

Kral (1966) reduces *L. eciliatum* to synonymy under *L. minus* (Chapm.) Small, which see in these series of notes for his discussion of his reasons for so doing. However, on the label of *Kral 17747* from Walton County, Florida, he suggests that *L. eciliatum* may be a natural hybrid between *L. engleri* and *L. minus*.

Additional citations: FLORIDA: Lake Co.: *Bright 3842* (Ws). Putnam Co.: *R. M. Harper 7* (W--513490), *8*, in part (W--513491). Walton Co.: *Curtiss 3022* (Ca--189378--isotype, Mu--374--isotype).

LACHNOCAULON EKMANNII Ruhl.

Synonymy: *Lachnocaulon ekmanii* Ruhl. apud A. W. Hill, Ind. Kew. Suppl. 7: 133. 1929.

Bibliography: Ruhl. in Fedde, Repert. Spec. Nov. 22: 34. 1925; A. W. Hill, Ind. Kew. Suppl. 7: 133. 1929; Moldenke, N. Am. Fl. 19 (1): 46 & 47. 1937; Moldenke, Phytologia 1: 317, 330, 351, 355, & 360. 1939; Moldenke, Known Geogr. Distrib. Erioc. 5 & 42. 1946; León, Fl. Cub. 1: 284 & 426. 1946; Moldenke, Alph. List Cit. 1: 91, 92, & 187 (1946) and 3: 930. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 44 & 207. 1949; Moldenke, Phytologia 3: 494. 1951; Moldenke, Résumé 52 & 484. 1959; Moldenke, Résumé Suppl. 18: 12. 1969.

As pointed out by me previously [Phytologia 1: 330. 1939], Ruhland apparently spelled the specific epithet of this taxon "*ekmannii*" purposely and I see no valid reason for "correcting" it. The so-called "correction" of the original spellings of scientific names is most highly undesirable and should be avoided wherever and whenever possible since various "experts" often "correct" spellings differently and this can lead to almost endless confusion. There is practically no end to the number of names that could and would be "corrected" if this practice were to become established.

Additional citations: CUBA: Pinar del Río: *Ekman 18132* (S), *18757* (N--photo of type, S--type, Z--photo of type).

LACHNOCAULON ENGLERI Ruhl.

Emended synonymy: *Eriocaulon maritimum* Chapm. ex Moldenke, Phytologia 1: 330, in syn. 1939. *Lachnocaulon glabrum* Chapm. ex Moldenke, Phytologia 1: 330, in syn. 1939 [not *L. glabrum* Körn., 1856]. *Lachnocaulon maritimum* Torr. ex Moldenke, Phytologia 1: 330, in syn. 1939.

Bibliography: Ruhl. in Engl., Pflanzenreich 13 (4-30): 240, 241, & 288. 1903; J. K. Small, Fl. Southeast. U. S., ed. 1, 234 & 235. 1903; Prain, Ind. Kew. Suppl. 3: 99. 1908; J. K. Small, Fl. Southeast. U. S., ed. 2, 234 & 235. 1913; J. K. Small, Man. Southeast. Fl. 256. 1933; Moldenke, N. Am. Fl. 19 (1): 46 & 47. 1937; Moldenke, Phytologia 1: 330, 349, 353, 356, 357, 359, & 360. 1939; Worsdell, Ind. Lond. Suppl. 2: 28. 1941; Moldenke, Known Geogr. Distrib. Erioc. 3 & 42. 1946; Moldenke, Alph. List Cit. 1: 25, 59, 98, 99, 116, & 257. 1946; Hill & Salisb., Ind. Kew. Suppl. 10:

86 & 126. 1947; Moldenke, Phytologia 2: 491 & 494. 1948; Moldenke, Alph. List Cit. 2: 460, 461, 507, 508, & 512 (1948), 3: 760, 777, 778, 808, & 813 (1949), and 4: 1117, 1187, & 1201. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 9 & 207. 1949; Moldenke, Phytologia 3: 142 (1949) and 3: 494--495. 1951; Moldenke, Résumé 12, 287, 291, & 484. 1959; Moldenke, Résumé Suppl. 3: 3 (1962) and 10: [1]. 1964; R. Kral, Sida 2: 316, 317, & 323--325. 1966; Shinners, Sida 2: 443. 1966; Moldenke, Résumé Suppl. 16: [1] (1968), 17: 10 (1968), and 18: 12. 1969; Moldenke, Phytologia 18: 376, 425, 426, & 437. 1969.

Illustrations: J. K. Small, Man. Southeast. Fl. 256. 1933; R. Kral, Sida 2: 324. 1966.

Recent collectors have found this species growing on sand beaches and in brackish sand, flowering and fruiting from June to September and in December. Kral describes his collection from Walton County, Florida, in these words: "heads chocolate-brown, mixed with dull brown ones of L. minus". He further avers that the plant is "a weed in sandy peat of ditchbank through slash pine - saw palmetto flatwoods" and "growing in sandy peaty margin of small lake in longleaf pine - turkey oak hills, mixed with L. minus". Hawkes describes it as "a common tufted herb in wet sandy pinewoods". Curtiss found the plant "spreading flat on moist cultivated ground" in Volusia County, identified it as Paepalanthus pilulifer Körn., and regarded it as "native to Brazil" and therefore merely introduced in Florida. In this identification he was, of course, quite in error. Tomlinson found L. engleri "in wet sand at margin of lake, not inundated and forming a more or less continuous peripheral zone".

Kral (1966) describes the habitat of L. engleri as "Moist sands, sandy-peats or peat-muck of pineland pond margins, lakeshores, and mildly acid marshes along the seacoast, coastal plain, the lower Pleistocene terraces, Florida. Type. Ditches and lakeshores in the vicinity of Eustis, Lake Co., Florida, Nash 1184. The dark brown inflorescence, glabrous scape, and deep-brown, lustrous seed of this species distinguish it from all others of the genus that have been found in Florida.

"The almost 'spontaneous' development of large numbers of this species on recently disturbed wet sands or upon the drying peat left by fluctuating lake and pond margins in Florida makes one wonder whether any habitat of relative permanence is occupied by this species. Certainly its seed must have an inherent capacity to remain dormant for such extended periods of times as necessary for such ephemeral habitats to recur. A similar behavior is noted for L. minus, a species with which L. engleri most frequently is found."

Material has been misidentified and distributed in herbaria under the names L. glabrum Körn., Eriocaulon ravenelii Chapm., and Paepalanthus pilulifer Körn. The R. M. Harper 8, cited below, is a mixture with L. eciliatum Small.

Additional citations: FLORIDA: Highlands Co.: McFarlin 9599

(N); W. S. Phillips 2304 (Tu--79290); Tomlinson 10-6-63 L (Ft--271). Lake Co.: Goodale s.n. [Mt. Dora, April 7, 1933] (Ms--69816); G. V. Nash 1184 (B--type, Ca--115164--isotype, Mm--7951--isotype, Ms--15502--isotype). Martin Co.: R. Kral 18235 (N), 20386 (N). Orange Co.: A. D. Hawkes 676 (Ca--1216531). Polk Co.: McFarlin 3256 (Mi), 3262 (Mi). Putnam Co.: R. M. Harper 8, in part (W--513491). Santa Rosa Island [Santa Rosa Co.]: Fassett 19914 (Ws). Volusia Co.: Curtiss 6894, in part (Ca--142526); R. Kral 18426 (N). Walton Co.: R. Kral 17746 (N).

LACHNOCAULON FLORIDANUM Small

Bibliography: J. K. Small, Fl. Southeast. U. S., ed. 1, 234, 235, & 1328. 1903; Prain, Ind. Kew. Suppl. 3: 99. 1908; J. K. Small, Fl. Southeast. U. S., ed. 2, 234 & 235. 1913; J. K. Small, Man. Southeast. Fl. 256. 1933; Moldenke, N. Am. Fl. 19 (1): 46--48. 1937; Moldenke, Phytologia 1: 330, 349, & 359. 1939; Moldenke, Known Geogr. Distrib. Erioc. 3 & 42. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 9 & 207. 1949; Moldenke, Alph. List Cit. 3: 760. 1949; Moldenke, Phytologia 3: 495. 1951; Moldenke, Résumé 12 & 484. 1959; R. Kral, Sida 2: 315, 319, & 321. 1966; Shinners, Sida 2: 443. 1966.

Kral (1966) feels that this species should be reduced to synonymy under L. anceps (Walt.) Morong. Material of it has been misidentified and distributed in herbaria as L. glabrum Körn.

Additional citations: FLORIDA: Lake Co.: G. V. Nash 1981 (Ms--15501--isotype).

LACHNOCAULON GLABRUM Körn.

Bibliography: Körn., Linnaea 27: 568--569. 1856; C. Müll. in Walp., Ann. 5: 920--921. 1860; A. W. Chapm., Fl. South. U. S., ed. 1, pr. 1, 504. 1860; C. Müll. in Walp., Ann. 6: 1203. 1861; A. W. Chapm., Fl. South. U. S., ed. 1, pr. 2, 504 (1865), pr. 3, 504 (1872), ed. 2, pr. 1, 504 (1883), pr. 2, 504 (1884), pr. 3, 504 (1887), and pr. 4, 504. 1889; Morong, Bull. Torr. Bot. Club 18: 361. 1891; A. W. Chapm., Fl. South. U. S., ed. 2, pr. 5, 504. 1892; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 2: 19. 1894; A. W. Chapm., Fl. South. U. S., ed. 3, 531. 1897; Ruhl. in Engl., Pflanzenreich 13 (4-30): 240, 242, & 288. 1903; J. K. Small, Fl. Southeast. U. S., ed. 1, 234 & 235 (1903) and ed. 2, 234 & 235. 1913; J. K. Small, Fl. Miami 37. 1913; J. K. Small, Man. Southeast. Fl. 256. 1933; Moldenke, N. Am. Fl. 19 (1): 46 & 48. 1937; Moldenke, Phytologia 1: 331, 349, 357, & 362. 1939; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 2: 19. 1946; Moldenke, Known Geogr. Distrib. Erioc. 3 & 42. 1946; Moldenke, Phytologia 2: 491. 1948; Moldenke, Alph. List Cit. 2: 412, 461, 475, 524, & 548 (1948), 3: 753, 877, 941, 942, 944, & 958 (1949), and 4: 1192, 1201, & 1216. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 9, 11, & 207. 1949; Phytologia 3: 80 (1949) and 3: 495. 1951; Moldenke, Résumé 12, 14, & 484. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 2: 19. 1960; Thanikaimoni, Pollen &

Spores 7: 183 & 186, tab. 1. 1965; R. Kral, Sida 2: 315, 319, & 321. 1966; Moldenke, Résumé Suppl. 16: [1]. 1968; Moldenke, Phytologia 17: 490 (1968), 18: 437 (1969), and 19: 75. 1969.

Illustrations: Thanikaimoni, Pollen & Spores 7: 183, tab. 1. 1965.

Collectors have found this plant growing along trails and in moist pinelands, flowering and fruiting in March, May, and December. Tomlinson found it on "sandy prairies, forming small tufts closely appressed to the ground" and "along roadside in sandy scrub".

Kral (1966) reduces this species to synonymy under *L. anceps* (Walt.) Morong and on the labels of his collections, cited below, tells of finding the plant "in sandy peat of slash pine - palmetto flatwoods bog", "in sandy peat of bank of ditch through slash pine - saw palmetto flatwoods, mixed with a population of *L. anceps*", "in sandy peaty clearing in pine-palmetto savanna flatwoods: in this area most have glabrous scapes but grade north into more and more pubescent scapes", "scapes ranging from smooth to hairy", and "most of the population in this area with smooth scapes, but not consistently so". In view of these field observations it might be advisable to reduce *L. glabrum* to the rank of variety or form under *L. anceps*, but I feel that certainly some nomenclatural recognition should be given it.

Material of *L. glabrum* has been misidentified and distributed in herbaria as *L. beyrichianum* Sporleder and as *Eriocaulon ravenelii* Chapm. On the other hand, the *A. C. Martin s.n.* [Burgaw, 5/17/1925], distributed as *L. glabrum*, is actually *L. beyrichianum* Sporleder; *Curtiss 3022* is the type collection of *L. eciliatum* Small; *G. V. Nash 1184* is the type collection of *L. engleri* Ruhl.; *G. V. Nash 1981* is the type collection of *L. floridanum* Small; *Curtiss 5911* is *L. minus* (Chapm.) Small; *P. O. Schallert 16912* is a mixture of *L. anceps* (Walt.) Morong and *Syngonanthus flavidulus* (Michx.) Ruhl.; *G. Een s.n.* [25.3.1951] is *Eriocaulon compressum* Lam.; *A. P. Garber s.n.* [S. Florida, 1877] is *E. ravenelii* Chapm.; and *P. O. Schallert 16312* is *Syngonanthus flavidulus* (Michx.) Ruhl. *Meebold 28099*, cited below, is a mixture with *Syngonanthus flavidulus*.

Additional citations: ALABAMA: Escambia Co.: *X. M. Gaines 249* (N). FLORIDA: Broward Co.: *Tomlinson 15.XII.63 A* (Ft--277). Charlotte Co.: *R. Kral 18048* (N). Collier Co.: *Tomlinson 31-3-63 A* (Ft--270, Ft, Ft). Dade Co.: *A. A. Eaton s.n.* [Orange Glade, Dec. 7, 1903] (Rf); *Small, Mosier, & Small 6912* (S). Lee Co.: *R. Kral 18012* (N); *P. C. Standley 18889* (W--1028668). Marion Co.: *Meebold 28102* (Mu). Martin Co.: *R. Kral 18288* (N), *20418* (N). Palm Beach Co.: *W. B. Fox s.n.* [May 10, 1945] (No--15818), *s.n.* [Delray Beach, May 27, 1945] (We); *Meebold 28101* (Mu). Polk Co.: *Meebold 28099*, in part (Mu). Saint Lucie Co.: *R. Kral 20424* (N).